THE IMPACT OF TEXTUAL COHESIVE CONJUNCTIONS ON THE READING COMPREHENSION OF 4TH YEAR ENGLISH MAJOR STUDENTS IN LIBYAN UNIVERSITIES

By

Abdussalam Ammar Innajih

Thesis submitted for the degree of Doctor of Philosophy, School of Education, Communication, and Language Sciences

University of Newcastle Upon Tyne

2007

Abstract

This study investigated the impact of textual cohesive conjunctives on the reading comprehension of Libyan university students studying English as a foreign language. Conjunctions as defined by Halliday and Hasan (1976) in their theory of textual cohesion provide the theoretical background to this work.

The literature reviewed revealed contradictory findings in relation to the effect of conjunctions on reading comprehension. Many linguists and psycholinguists found that all conjunctive types (i.e. additives, adversatives, causals, and temporals) can facilitate reading comprehension. However, other studies came to the conclusion that conjunctives affected reading comprehension in different ways, or that they had no effect or a negative effect on the reading comprehension of native and foreign language readers.

In order to explore the effects of conjunctions on the reading comprehension of university students for whom English was a foreign language (i.e. 4th year English department students in two Libyan universities) an intervention programme was designed.

This programme involved the application of pre-post tests and only post-test of reading comprehension. The first experiment was organised in the Gharian English Department and the second took place in the Sabrata English Department. The participants were divided into comparative/control and treatment/intervention groups. The treatment group was explicitly taught conjunctions for three months. The comparative groups were taught their current traditional syllabus.

The rationale behind having two different types of experiments in two English departments is the recommendation of Bryman (1989) and other methodologists to be cautious of the possible negative effect of pre-testing. There is a possibility that the

participants who attend the pre-test could benefit from this experience when they answer the same questions in the post-test, especially if the interval between the tests is short. By organising two experiments enough data were available for the study even if a negative effect from the pre- and the post-test experiment was discovered.

That was followed by interviewing the participants of the treatment groups and asking them about the strategies they had used in answering the reading comprehension test. By organising semi-structured interviews, the researcher was able to explore the extent to which the participants had used their understanding of conjunctions to facilitate reading comprehension.

Descriptive and inferential statistics were used to analyse the collected data. T-tests were conducted to find out if there were any significant differences between the means of the treatment group, and the comparative groups' pre and post-tests results.

The results revealed that all of the conjunctive types investigated facilitated the reading comprehension of the fourth year English students in the two Libyan university English departments. However, it was found that some conjunctive types were more facilitative of reading comprehension than others. The pedagogical implications of the findings for the teaching of reading in Libyan universities and beyond are discussed.

Declaration

I certify that all the material submitted in this work which is not my own work has been identified and that no material is included which has been submitted for any other award or qualification.

Signed: 

Date: 7/11/2007.

Dedication

To the pure soul of my late father

and to my passionate mother,

wife and children

Acknowledgement

This study has come to its final stage with the assistance of many cooperative people and institutions. I would like to express my immense gratitude to friends and colleagues who provided me with the supported guidance throughout this study.

First of all, I would like to acknowledge my supervisor Prof. Frank Hardman to his support, advice, and positive and encouraging nature. It was his trust in my ability which gave me enough confidence to complete this work. I would like also to acknowledge Dr. Scott Windeatt, my recent supervisor, for the time he dedicated for carefully revising my work and for the useful feedback.

This study would not have taken place without the generosity of many people. Sincerest gratitude goes out to Ali Al-Aurdi, the head of the English Department in Gharian University, for his permission and cooperation in conducting the study collecting procedure. A word of thanks goes to Amir Dahmani and Salama Mubarek, members of teaching staff in the same department, for their help and advice. A note of thanks goes also to the students of the Gharian and Sabrata English departments who contributed to the accomplishment of the study as participants.

I would like to thank all of those friends and fellow professionals who helped me in evaluating and analyzing my data and provided me with useful feedback. I was very fortunate to be able to rely on their expertise both English native speakers and foreign students. Many thanks go to Jane Scott and the math's group in Robinson Library for their help in analyzing my data.

Finally to my family, I express my deepest appreciation for their understanding, support, and encouragement throughout the study stages.

Table of contents

Tables

Figures

Figure *Page*

Introduction

I. Background

All over the world, reading in L1 and L2 has the prime attention of educational authorities because of the national and individual benefits fluent reading could promote. Progressing in education and acquiring knowledge of modern technology are conditioned by satisfactory reading comprehension.

Thus, no body questions the importance of reading among other language skills. It is the skill we need for our academic progress, professional success, and personal development. As McDonough and Shaw (1993, p.101) state "...in many instances around the world we may argue that reading is *the* most important foreign language skill...."

However, the reading skill, unlike listening and speaking skills, which can be acquired without systematic instruction, needs to be learned in order to achieve reading fluency. The reading process has many stages: these stages start with making the decision to read a certain script and continue until full understanding of the written text has been achieved. Many approaches and methods have been used by teachers to teach reading skills and reading strategies which are believed to be effective.

For a reader to have satisfactory understanding of written text, information internal and external to the text should be integrated in the reader's brain and processed properly. Information relating to knowledge of the world and knowledge of the topic have an important contribution to make to text comprehension. Understanding the textual features, however, is very important to better reading comprehension. Among various textual grammatical features, cohesive devices are used by writers to signal certain semantic relations and make them explicit.

Cohesive ties such as reference, substitution, ellipsis, conjunctions and lexical cohesion have been found to facilitate reading comprehension of L1 and L2 readers if they are understood and used appropriately. Unlike other cohesive devices, conjunctions, however, have a unique role in text structure in that they join the independent sentences forming the text and contribute to its coherence. By so doing, it is suggested that they facilitate reading comprehension by guiding the reader to the type of the semantic relations existing between the linked sentences and "reduce the number of inferences the reader must make in order to comprehend the subsequent text" (Murray 1995, p108). Halliday and Hasan (1976, p.227) place a great emphasis on conjunctions by stating that their prime function is to "specify the way in which what is to follow is systematically connected to what has gone before".

This study investigates the impact of textual cohesive conjunctions on the reading comprehension of fourth year English department students in two Libyan universities. The cohesion theory as postulated by Halliday and Hasan (1976) was adopted the main theoretical framework to this study. This theory suggested that conjunctions as one of the cohesive devices contribute to the cohesion of text and consequently facilitate reading comprehension if they are used properly. Based on this, the terms and conjunctions as defined and classified by Halliday and Hasan (1976) were followed. Only the conjunctions which join independent sentences and contribute to the local and global coherence of the text were examined.

It is vital, however, that readers are able to identify conjunctions (i.e. their form and meaning), recognise their function, and use them during the reading process correctly in order to benefit from their presence in understanding text. Among the many reading problems Libyan university students face their failure to identify conjunctions and use them properly in their reading comprehension. It seems that

Libyan university students studying English in the fourth year of their studies have little information about conjunctions and their facilitating role for reading comprehension. This lack of conjunction beneficiary knowledge, among other things, has negatively affected the reading performance of Libyan university students and produced poor readers. It was observed that their reading comprehension course scores were very low in comparison with their other course results. For example, the reading comprehension course results of the third year English Department students in Sabrata in the academic year 2003/2004 showed that 57.14 per cent of the students who passed the course achieved 50 out of a hundred, 30 per cent scored between 51 and 65, and only 12.85 per cent achieved scores over 66. This was also revealed by the findings of a background questionnaire completed by more that 200 students from five English departments and by results of a pre-test organised in the Gharian English Department. It was found that even the concept of 'conjunction' is something new to many of the students. This could be attributed to the content of their current English language courses. In their grammar courses, Libyan university students were taught a few connecting items such as *and, yet, but, so,* and *then* under grammatical terms such as coordinators and subordinators. The same items were given when they were taught how to write a coherent text in their writing courses. However, as the data of the mentioned questionnaire revealed, conjunctions as defined by Halliday and Hasan (1976) and their relation to reading comprehension were not included in their reading comprehension courses.

Many factors could have contributed to this problem, including teacher qualifications, teaching methods used, and the content of the syllabus. As mentioned above, various approaches and techniques have been used in teaching reading comprehension; however, the results of the third year reading comprehension course

reported above and the experience of the researcher suggest that teachers have rarely tried to explicitly teach the facilitating role of conjunctions in reading comprehension.

It is therefore predicted that if fourth year English department students in Libyan universities are explicitly taught conjunctions and their relation to reading comprehension they can benefit from their presence in a written text and achieve satisfactory comprehension from any authentic text. To examine this assumption, the following major thesis questions are investigated:

Are students in their fourth year of learning EFL in the English Departments of Gharian and Sabrata Universities, Libya able to identify the textual cohesive conjunctions and interpret their function correctly in their reading comprehension after they are explicitly taught conjunctions? Do they benefit from being explicitly taught about textual cohesive conjunctions in their reading comprehension course?

The research data collection process was guided by the following sub-research questions:

1. What is the attitude of fourth year English department students in Libyan universities towards conjunctions and their relations to reading comprehension?
2. Can the study participants identify the items which function as conjunctions, interpret their function, and justify their choices of the multiple-choice rational cloze reading comprehension test correctly?
3. Does the ability to identify conjunctions and recognise their function facilitate the reading comprehension of the study participants?
4. Are some conjunctive types more facilitative to reading comprehension than others?

To answer the thesis questions, a multi-method approach was used. This included a questionnaire, experimentation and an interview. As a preliminary data collection method, the participants of the study completed a self-completion questionnaire to gather their attitude towards their English reading habits, their knowledge of conjunctions and their relation to reading comprehension. The questionnaire findings were used as a basis for designing the reading intervention programme which was taught to the treatment groups. After that, two intervention programmes were organised. These programmes consisted of a pre and post-tests experiment and a post-test only experiment. The first took place in the Gharian English Department and the second was organised in the Sabrata English Department. The participants of the experiments were divided randomly into two groups: intervention/ treatment group and comparative group. Only the treatment groups were explicitly taught conjunctions.

The rationale behind having two different types of experiments in two English departments was to follow the recommendation of Bryman (1989) and other methodologists to be cautious of the possible negative effect of pre-testing. There is a possibility that the participants who attend the pre-test could benefit from this experience when they answer the same questions in the post-test, especially if the interval between the tests is short. By organising two experiments enough data were available for the study even if a negative effect from the pre and the post-test experiment was discovered. Such a possibility, however, was remote because the interval between the pre and post-tests was long enough for the participants to forget about the contents of the pre-test.

As a complementary method, the interview questions asked the participants of the treatment groups to justify their conjunction choices in the post reading

comprehension rationale cloze test. This explored whether the participants benefited from the reading programme and had a satisfactory understanding of the function of conjunctions or whether they had arrived at their correct answers by mere chance.

Descriptive and inferential statistics were used to analyse the collected data. By using a statistical t-test analysis, an independent-samples t-test and a paired-samples t-test, the actual impact of teaching textual cohesive conjunctions on the reading comprehension of the treatment groups was revealed. (More details about the research methodology are included in Chapter Five)

II. Significance of the study

According to their semantic function, conjunctions are divided by Halliday and Hasan (1976) into four types: additive/ *and* group, adversative/ *but* group, causal/ *so* group and temporal/ *then* group. Whether conjunctions facilitate reading comprehension and whether all types of conjunctions facilitate reading comprehension with the same level of effect is controversial. So far there has been no consensus on the actual impact of conjunctions on the reading comprehension of L1 or FL readers. Contradictory findings have been revealed by many empirical studies. Some of these findings suggested that all conjunctive types facilitate reading comprehension. They argue that conjunctions signal the semantic relations that exist in a text and make these relations explicit, which helps in facilitating reading for comprehension. A large number of studies have revealed that different types of conjunctions affect reading comprehension differently. Other research findings however, have challenged this positive impact, claiming that a text is coherent with or without the explicit presence of conjunctions. A handful of studies have even found that conjunctions have a negative impact on reading comprehension because they

make the linked sentences longer and add extra load on the reader's brain. "Thus, so far there is no consensus on the exact role of explicit [conjunctions] in text" (Degand and Sanders 2002, p.470). (See Chapter Four for more details)

Based on these contradictory findings, the researcher decided to shed more light on this topic by investigating the impact of all conjunctive types on the reading comprehension of fourth year English department students in two Libyan universities. The study investigated the effect of conjunctions on reading comprehension in general and the effect of every individual conjunctive type on the reading comprehension of the target participants. It explored whether the conjunctive types affect reading comprehension in the same way or whether some of them are more facilitative of reading comprehension than others.

By reviewing the literature related to the impact of conjunctions on reading comprehension it has been found that many features are found to be specific to this study. Most of the studies which investigated this topic examined the effect of certain conjunctive types on reading comprehension. For instance, several studies investigated the effect of the additives and causals on reading comprehension; others examined the adversatives and the causals. Furthermore, in many studies only one or two conjunctives were used as being representative of a certain type of conjunctions. For example, *and* was used as an additive conjunction in Caron, Micko and Thûring (1988). In contrast, this study investigates the impact of all conjunctive types on reading comprehension with a reasonable representative number of conjunctions from each type. Five conjunctions were selected according to their frequency to represent each conjunctive type. This was designed to provide comprehensive information about the topic under investigation. (See the instrument section in Chapter Five for more details)

In addition, most of the studies investigating this topic were designed on the basis that the participants of these studies were given sentences or texts with present/absent conjunctions for testing their reading comprehension. The findings of these studies were reported in the form of a comparison between the comprehension achievements of the participants with present/absent conjunctions. This study went one step further: it examined the reading comprehension of its participants of the treatment groups after they were explicitly taught conjunctions and their relation to reading comprehension. Their results were compared with the results of the comparative groups who were exposed to the traditional reading programme. This guaranteed that the target participants (i.e. treatment groups) had large information about conjunctions and their effect on reading comprehension. It was thought important to ensure that the participants knew about conjunctions and how to use them in reading comprehension before their text or sentences comprehension was tested.

Furthermore, the application of two intervention programmes in two different English departments supported the external validity of this study. By investigating the same topic and using the same measuring instruments in the Gharian and Sabrata English Departments, it became possible to claim that the results of the study, if found similar, could be generalized to other FL readers with the same level of language proficiency. The two intervention programmes have many similar features. (See Chapter Five for more details).

Finally, the measuring instruments of this study consisted of three tests. First, the participants were asked whether they were able to identify conjunctions; second, they were asked whether they were able to recognise their semantic function; and third, their reading comprehension was evaluated. It is important that the participants

could identify conjunctions and recognise their function before they could use them in their reading comprehension. There should be a logical relationship between the results of the three tests. If, for example, the result of the identification of conjunctions test was found to be poor, the reading comprehension test result should be at the same level or worse. Any good result in the reading comprehension test preceded by poor identification of conjunction test result could be interpreted as being achieved by mere chance. This may threaten the internal validity of the reading comprehension measurement. However, the opposite could happen. A study's participants could have a good result with the identification of conjunction test and the function recognition of conjunction test, but have a poor reading comprehension test result. Many students are able to identify conjunctions and recognise their function but they are unable to use them in their reading comprehension. Measuring the research participants' ability to identify conjunctions and recognise their function before their reading comprehension was examined was specific to this study. Other studies based their investigation on the assumption that their participants have enough knowledge about conjunctions, which is not always accurate, especially with FL readers. Cohen, Hillary, Phyllis, Rosenbuam, Jonathan, and Jonathan (1988) investigated the ability of university students learning English as a second language to identify conjunctive words in expository and narrative texts. They found that "learners were not picking up on the conjunctive words signaling cohesion, not even the more basic ones like *however* and *thus*" (Cohen et al. 1988, p.160).

By considering the above features, it can be claimed that this study was the first of its kind to take place in Libyan universities since there has been no academic study investigating this problem in Libyan universities to date. It was hoped that the findings of this study would make a useful contribution towards clarifying this

controversial topic and consequently have important pedagogical implications for the benefit of FL readers in Libya and beyond. Thus, by working on this topic it was hoped that a gap in the research of the reading skill would be filled which would then contribute to the development of new approaches to teaching reading comprehension by persuading English teachers to explicitly teach conjunctions and their facilitating role in reading comprehension. Furthermore, based on the findings, curriculum is recommended to be reviewed and more explicit drills on conjunctions are included in the printed materials to improve the reading skills of university students

III. The scope of the study

As mentioned above, this study examined the impact of textual cohesive conjunctions on the reading comprehension of fourth year English department students in two Libyan universities studying English as a foreign language. In order to provide the necessary background information of the research, the literature related to the definitions of reading, reading skills, reading strategies, text, cohesion, coherence, conjunctions and their relation to reading comprehension was reviewed. Available sources of information including books, theses, studies published in journals and the internet which had any relevance to the research problem were checked. This helped the researcher in limiting the research problem, clarifying the research questions and exploring the appropriate research methods which were used in collecting the data needed for the study.

Reading comprehension is the focus of examination in the study; however, topics such as reading process and recall were briefly touched because of their close relation to reading comprehension. Satisfactory comprehension is a precondition to good recall, and reading process is the stage which precedes reading production.

Only the conjunctions defined in Halliday and Hasan's (1976) taxonomy were covered by this study because their theory of cohesion was adopted as the theoretical background to the thesis. Other connectives such as coordinators and subordinators were excluded since the compound and complex sentences they join are structurally cohesive.

Fourth year English department students in the Gharian and Sabrata English departments in two Libyan universities were selected to be the participants of the study. This sample was based on the assumption that these students had fewer problems with reading comprehension in English than other lower levels. The fourth year was their last year of study before graduation.

IV. Thesis organisation

Besides the introduction, the content of the thesis is divided into two main parts: the first part, which consists of four chapters, covers the literature review of topics related to the study, and the second part, which also consists of four chapters, covers the research methodology, data analysis, discussion of the findings and the conclusion. (See Figure 1 below)

The First Chapter defines reading skills, including the definition of reading comprehension which is the dependent variable in this study. Reading theories are explored from bottom-up and top-down models to the recent interactive models. The use of conjunctions in these models is highlighted. This is followed by presenting examples of reading skills such as skimming, scanning, intensive, and extensive skills. Reading strategies are briefly touched upon and their relation to conjunctions is investigated. The relationship between reading skills and reading strategies is analysed and clarified by presenting the differences between them.

Cohesion and coherence are discussed in Chapter Two. Literature related to cohesion in general and cohesion as defined by Halliday and Hasan (1976) is critically reviewed. Definitions of coherence and the relationship between coherence and cohesion are explored. Conjunctions as important cohesive devices are reviewed in relation to cohesion theory.

Conjunctions are the focus of Chapter Three. Their various labels and definitions are thoroughly reviewed. Many suggested taxonomies are presented in this chapter. However, Halliday and Hasan's (1976) classification is analysed since these items are the independent variables of this study. Different approaches used to identify conjunctions and differentiate them from other connectives are highlighted.

The last literature review, Chapter Four, discusses the relationship between conjunctions and reading comprehension. Different studies investigating the impact of conjunctions on reading comprehension are critically reviewed. Their contradictory findings are compared. Various possible causes behind these diverse findings are stated at the end of this chapter.

The research methodology occupies Chapter Five. The research problem and the research questions are the first to be highlighted. This is followed by describing the research participants and the research design. The research methods selected for collecting the study data (i.e. the questionnaire, the experiments, and the interview) are clearly stated and the procedure of their application is explained. The validity and the reliability of the research methods, procedure, and the measuring instruments are emphasized. Finally, ethical issues are discussed in relation to the procedure of the data collection.

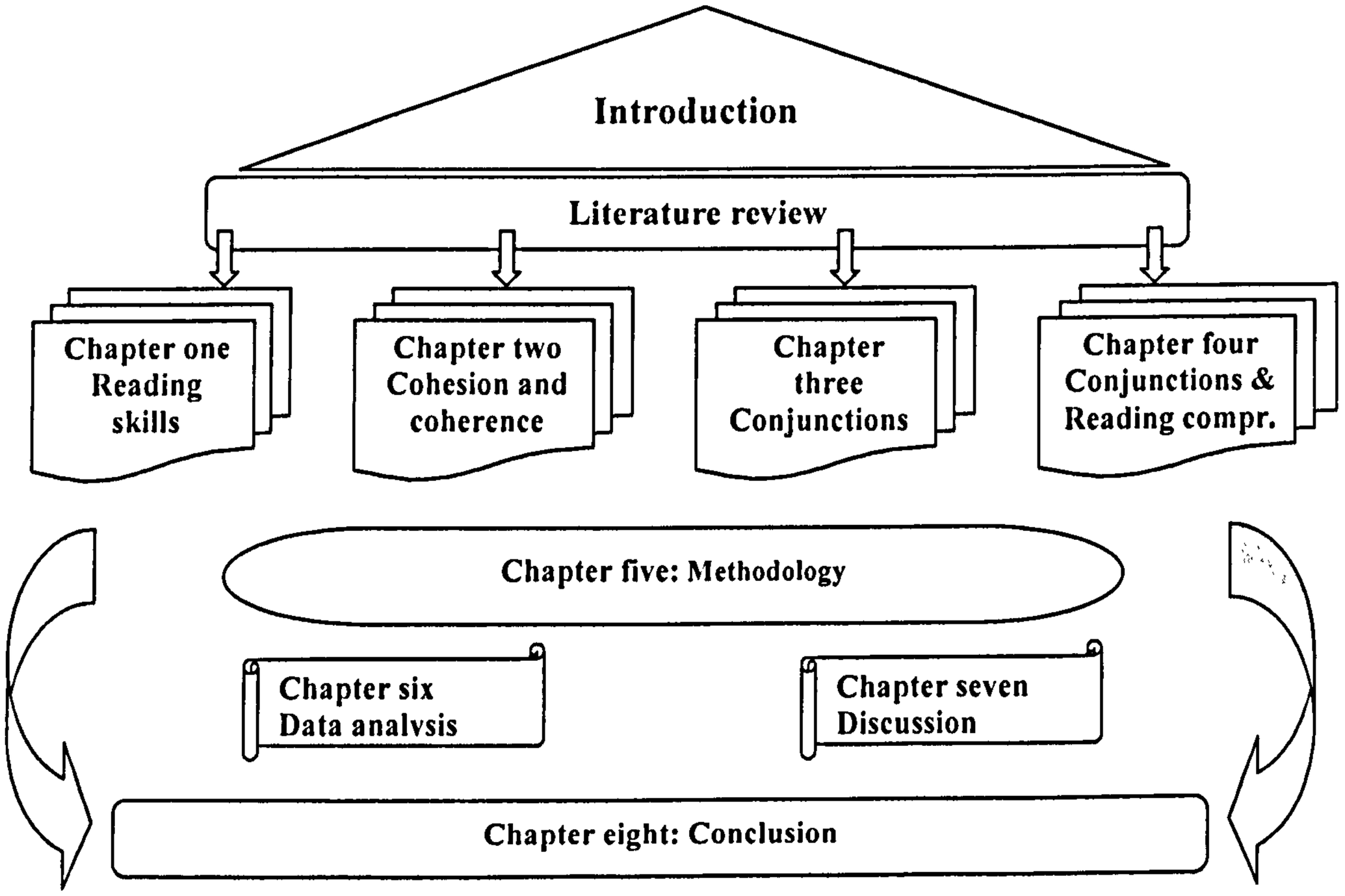
Chapter Six analyses the data collected in the preceding chapter. Various descriptive and inferential statistics are used. Frequency, percentages, and means are

calculated. T-test and chi squared are conducted to test if there is any significant relationship between different data categories. The findings are stated and illustrated by tables and/or graphs.

Chapter Seven discusses the relationship between the research findings and the literature review. This discussion includes the findings relating to the identification of conjunction tests, the findings of the function recognition of conjunction tests, and the findings of the reading comprehension tests of Gharian and Sabrata interventions.

Chapter Eight highlights the final conclusion of the study. Limitations observed during the research procedures are considered and the pedagogical implications of the study are discussed in relation to the research findings. Finally, suggestions for further study are discussed.

Figure 1: Structure of the thesis

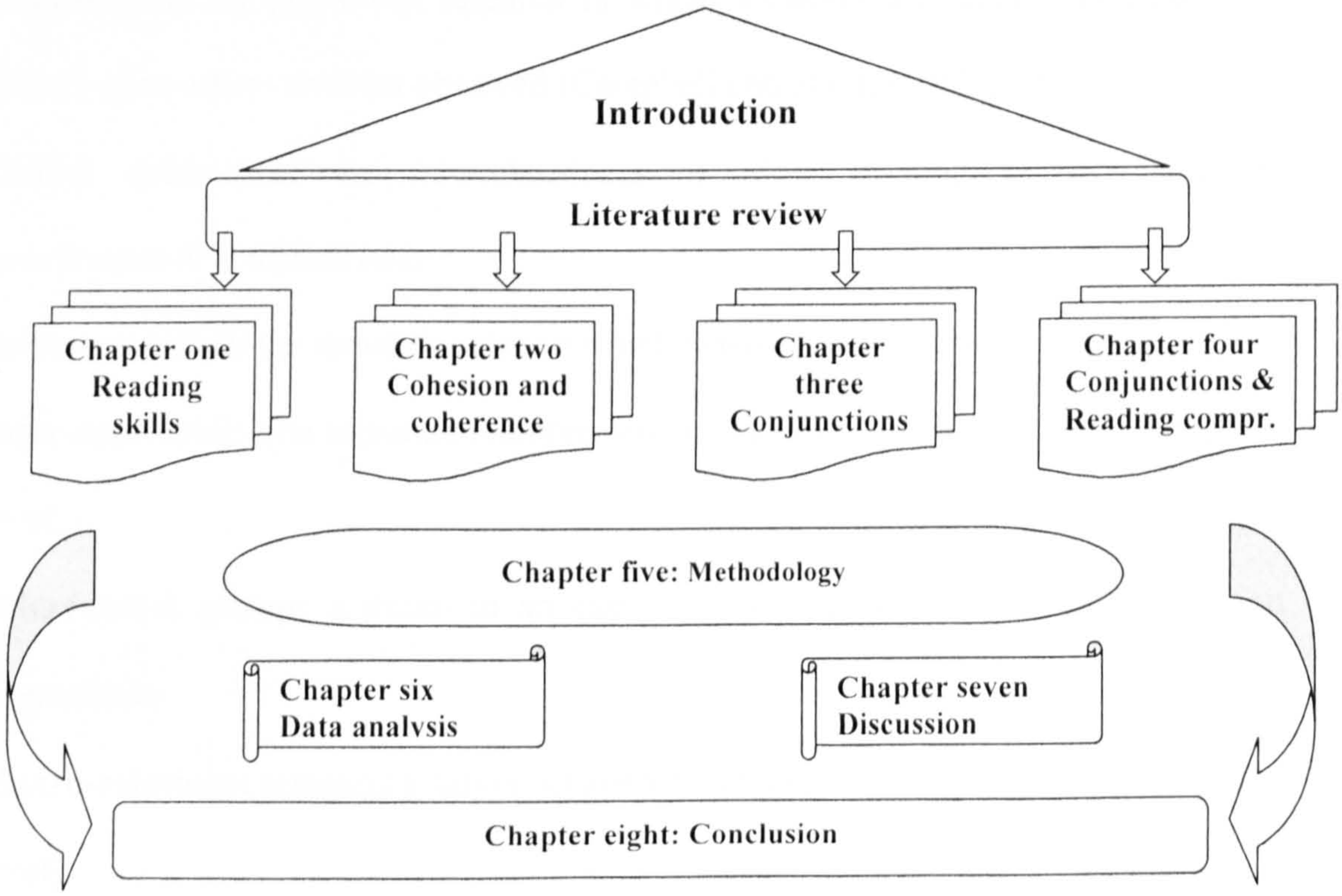


calculated. T-test and chi squared are conducted to test if there is any significant relationship between different data categories. The findings are stated and illustrated by tables and/or graphs.

Chapter Seven discusses the relationship between the research findings and the literature review. This discussion includes the findings relating to the identification of conjunction tests, the findings of the function recognition of conjunction tests, and the findings of the reading comprehension tests of Gharian and Sabrata interventions.

Chapter Eight highlights the final conclusion of the study. Limitations observed during the research procedures are considered and the pedagogical implications of the study are discussed in relation to the research findings. Finally, suggestions for further study are discussed.

Figure 1: Structure of the thesis



V. Definition of terms

Cohesion: a semantic relation where the interpretation of some element in the text is dependent on that of another.

Cohesive tie: a single instant of cohesion between a pair of semantically related items.

Coherence: the quality of interrelatedness among the ideas in text.

Comparative group: a group in an experimental design which does not experience intervention.

Conjunction: a semantic cohesive relation based on logical relation between independent sentences.

Conjunctives/ Conjunctions: the elements which join two independent sentences and make the semantic relations existing between the components of the text explicit.

Experiment: the portion of research in which variables are manipulated and their effects upon other variables observed (Campbell and Stanley 1972, p.1).

Global coherence: the interrelatedness of ideas existing between different constituents of a written text.

Intra-sentential: the semantic relation which exists between adjacent sentences.

Inter-sentential: The semantic relations which exist between sentences on the global level.

Intervention group: a group in an experimental design which is exposed to an intervention.

Macro-relations: semantic relation between different parts of a text (i.e. on the global level).

***Mean:** the 'middleness' or the arithmetic average of a set of N numbers. It can be calculated by adding all the scores and dividing by the number of scores.

Micro-relations: semantic relation on the local level (i.e. between adjacent sentences).

Local coherence: The interrelatedness of ideas existed between two adjacent independent sentences.

Participants: students or others who contribute to an experiment.

Reading intervention programme: a syllabus which is used in an experimental design given to the treatment group.

Reading comprehension: a penetration beyond the verbal forms of text to the underlying ideas, to compare these with what one already knows and also with one another, to pick out what is essential and new, to revise one's previous conceptions.

Lunzar and Gardner (1979, p.38)

Reading process: a mechanism by which pieces of information from different sources (i.e. external and internal to written text) are integrated in the brain of a reader and to achieve comprehension.

Reading skills: an acquired behaviour practiced automatically by the reader,

Reading strategy: refers to those mental processes that readers consciously choose to use in accomplishing reading tasks, (Cohen 1986, p.133).

***Recall:** the act or process of bringing back from memory a representation of prior learning by images or words.

Respondents: students or others who participate in a questionnaire or an interview.

***Standard deviation:** a statistic that measures the dispersion of a sample.

***Semantics**: the study of meaning in language, as the analysis of meaning of words, phrases, sentences, discourse, and whole texts; linguistic semantics.

Text: any passage of whatever length that forms a unified whole.

Treatment group: a group in an experimental design which is exposed to an intervention.

Traditional reading programme: The normal assigned programme which is given to the comparative groups.

***T-test:** a statistical technique that can determine whether one group of numerical scores is statistically higher or lower than another group of scores.

Types of cohesion: reference, substitution, ellipsis, conjunctions and lexical cohesion.

All the definitions with the symbol (*) are available from:

www.nde.state.ne.us/READ/FRAMEWORK/glossary/general_p-t.html

VI. Abbreviations

Comp. Gr. : comparative group

I.D. : Identification of conjunctions

F.R.C. : Function recognition of conjunction

S.D. : Standard deviation

R.C. : Reading comprehension

R.C. Course : Reading comprehension course

T.R. : Treatment group

X : Mean

Part one

Literature review

Literature Review

Chapter One

Reading skills

1.1. Introduction

This study investigates the impact of textual cohesive conjunctives on the reading comprehension of Libyan university students in their fourth year of study in Gharian and Sabrata English Departments.

Reading and writing skills are of a considerable importance in the modern world. Not everybody has to be a perfect writer. Reading, however, is a skill everybody has to master to progress in the contemporary world of technology. Academic success cannot be achieved if individuals have poor reading performance.

Fluent reading has many other benefits. It helps in improving writing skills, listening skills, and improving spelling accuracy, (Leung, 2002; Mason and Krashen, 1997). Learning a foreign language can also be enhanced by reading since "a great deal of language learning - lexis, syntax, rhetorical organization - would be accomplished via reading" (Urquhart and Weir 1998, p.24). Thus, reading is a unique skill; teachers, researchers, and curriculum designers are recommended to work hard to guarantee that students' reading performance at all education levels can develop fully.

This chapter will focus on revising the literature related to the reading skills as a background and reading for comprehension as the final desirable product of practising reading. This includes an overview of reading theories, reading skills, and reading strategies and the difference between them. The involvement of conjunctions

in the reading theories, reading skills, and reading strategies will be highlighted. Since reading comprehension is the dependent variable of this study, it is useful for the readers of this thesis to know something about these topics before the literature related to conjunctions and their actual impact on reading comprehension are reviewed. Thus, the discussion here includes:

1. The nature of reading
2. Theories of reading
3. Types of reading
4. Reading strategies
5. Differences between reading skills and reading strategies

Many pieces of information need to be available to the reader in order to achieve full understanding of a written text. Some of them are brought to the text by the reader, i.e. knowledge of the world (schemata), and other information exists in the text. Since reading is an interactive process among all the information available, the reader actively uses models such as bottom-up and top-down processing or the integration of both to extract meaning from text.

Some of the information presented in the text includes the textual cohesive conjunctions. These items are located in every cohesive text to help readers predict meaning and get the correct message the author wants to convey. These conjunctive items function locally and globally throughout the text to construct coherence of the ideas existing in the written text and consequently facilitate understanding. Throughout the reading process journey and whatever models, skills, and strategies adopted, textual cohesive conjunctions play a vital role in easing comprehension. However, before the forms and functions of these items are discussed and their

impact on reading comprehension is investigated, it is necessary to define the reading skill and how satisfactory comprehension is achieved.

1.2. The nature of reading

The use of human language basically manifests in four main skills: listening, speaking, reading, and writing. Around the age of five a healthy normal child can speak their mother tongue fluently. This happens before going to school because speaking is acquired by mere exposure to the target language.

Reading and writing, on the other hand, can only be learned through systematic instruction. That is why illiteracy remains high in the world population. Thus, reading and writing skills require instructors, reading materials and a place to practise these activities. Teachers are trained to transfer the knowledge of reading and writing they have to students who come to school with the hope of joining the 'literacy club' as Smith (1985) calls it. The questions now are what is the nature of knowledge students learn when they come to school? And what are the goals they are planning to achieve?

Smith (1985) argues that there is no accurate comprehensive definition of reading since reading as a concept is largely influenced by the context in which it is used. A person can read a book twice, but it is not guaranteed that they comprehend its message satisfactorily.

According to Smith (1985, p.101) a good definition of the concept 'reading' should include illustration, description, and analysis. Because of these characteristics, definitions such as "reading is the identification of written words" or "reading is the comprehension of the author's thoughts" are not comprehensive enough to include the characteristics mentioned above. The kinds of reading materials we are exposed to

everyday, and the purpose behind our reading and even the types of reading skills and strategies we practise, govern the definition of the concept 'reading'.

Even if we limit our reading to books for academic purposes, still there are books which we just scan or skim searching for specific information. Beside this, the word 'reading' has been used metaphorically in situations such as reading palms and reading faces. Again, defining reading as the decoding of written words does not cover the metaphorical use of reading.

Getting closer to a better definition is Nuttall's (1996, p.4), which states that the purpose of reading is "to get meaning from a text". Still, this definition also has its limitations. Smith (1985, p.102) reports that, "there is a lot of information in much of [written materials] that we do not get, for the very good reason that we do not want it". As an example, he mentions the telephone directory and the daily newspapers. The information printed in these materials and many others are consciously ignored by many readers. Efficient readers pay attention only to the written materials which fulfill their needs. Actually, most of us are selective readers.

After his argument against the definitions mentioned above, Smith suggests that reading is asking questions of written text and reading for understanding is a matter of getting the asked questions answered. A reader approaches a written text with a question or questions in their minds, and they deliberately look for just the information they need. This principle can be applied to include all written materials. For example, metaphorical and abstract expressions such as reading palms could be dealt with in the same way; asking questions and seeking answers. It is very important, however, to ask the right questions taking into consideration the types of texts. In addition, a reader usually asks questions with clear and precise purpose in

her/his mind and with certain limit of schema and linguistic knowledge of the language in print.

Nunan (1999) describes reading as an active process and compares it with listening skill, saying that there are a lot of similarities between them. He reports that both listening and reading involve highly complex cognitive processing operations. He observes that,

> An enormous amount of time, money and effort is spent teaching reading in elementary and secondary schools around the world. In fact, it is probably true to say that more time is spent teaching reading than any other skill.
>
> Nunan (1999, p.249)

The highly complex cognitive processing operations are affected by many factors. Some of them are knowledge of the world, purpose of reading, reader's motivation, reader's interest, and reader's knowledge of the language or text type (Nuttall 1996).

These characteristics are included in Harris's (1979) definition of reading which states that,

> Reading may be defined as the attaining of meaning as a result of the interplay between perceptions of graphic symbols that represent language, and the memory traces of the reader's past verbal and nonverbal experiences.
>
> (Harris's (1979, p.27)

Thus, meaning is not always something explicitly existing in the text; it is the outcome of the interaction between the reader and the writer by using textual features such as conjunctions as a medium to make the meaning explicit.

This interaction is divided by Ozono and Ito (2003, p.284) into three levels:

1. Linguistic level - all the language units start from words such as 'conjunctions, coordinators and subordinators', phrases such as 'on the other hand' and sentences existing in the text interact with each other by using the linguistic knowledge of the reader to form textuality.

2. Cognitive level - models such as bottom-up, top-down and interactive models integrated together, and with linguistic knowledge and knowledge of the world to create meaning.

3. Interpretive level - this occurs between the reader and the text or indirectly between the reader and the writer through the text. Many strategies such as SQ3R (Survey, Question, Read, Recite and Review) are used for correct interpretation of the text message.

However the reader may find a text difficult if:

- The code, i.e. the language of the writer, is different from the language of the reader.
- The writer and the reader do not share the same schemata or knowledge of the world.
- The terms and expressions used in relation to a specific field are strange to the reader.
- The reader's vocabulary is limited.

The last point is quite common among foreign language readers.

Thus, reading is an interactive process between the reader and the text with prior question(s) in mind in order to extract meaning from a written text and achieve satisfactory comprehension. The ability to integrate the information related to knowledge of the world and the correct interpretation of the textual features such as conjunctions speed the achievement of comprehending the message the writer wants

to convey. For the reader to achieve comprehension, s/he has to "penetrate beyond the verbal forms of text to the underlying ideas, to compare these with what one already knows and also with one another, to pick out what is essential and new, to revise one's previous conceptions" Lunzar and Gardner (1979, p.38). The process which leads to comprehension as defined by Lunzar and Gardner is explained by the following theories.

1.3. Reading theories

Davies (1995, p.57) uses the term "model" to refer to "a formalized, usually visually represented theory of what goes on in the eyes and the mind when readers are comprehending (or miscomprehending) text". What goes on during the reading process for the moment the reader's eyes fall on the print to the final interpretation which takes place in the brain has been the major concern of linguists and psycholinguists for a long time. Many explanations and theoretical models have been suggested. Some of the "theories" depend on experimental studies using L1 and L2 readers as subjects. Many major reading process models have been recognized as an acceptable explanation of the reading process phenomenon.

A model is defined by Davies (1995, p.59) as "a systematic set of guesses or predictions about a hidden process, which are then subjected to 'testing' through experimental studies". The following review of reading models is chronologically arranged in order to follow up their development and closely describe the reading phenomenon. These models will be briefly reviewed since the reading process is not the focus of this study. Yet, it is important to include them here since they explain the stages which precede and affect comprehension (i.e. the final product of reading).

1.3.1. The bottom-up model

By using laboratory languages, Gough (1972) carried out an important empirical study for collecting evidence about the actual stages of the reading process. Adult fluent readers were the subject of his experiment. His findings revealed that reading begins with the smallest writing unit. For him reading is "letter by letter progression through text, with letter identification followed by the identification of the sounds of the letters until words, their syntactic features, and then meaning are finally accessed" (Davies, 1995, p.60).

In this model it is suggested that textual cohesive conjunctives are the second to attract the reader's attention after recognizing letters since they are words constructed of letters. As textual cohesive items, conjunctions, for example, are easily recognized by the reader since they are essential key words in the text. These cohesive ties strengthen the cohesion of the text and signal the semantic relations existing in the text which saves time and effort of readers. Teachers apply this model under "phonic approach" which focuses on letter to sound correspondence.

By following up the application of this model in teaching reading many limitations have been observed. Smith (1994) argues that the large number of grapho-phonic rules constraining the spelling-to-sound correspondence of English words makes this model difficult to apply in teaching reading. Beside this, several psychologists demonstrate that the processing phases suggested by Gough are difficult for short-term and working memory to deal with without confusion (Goodman, 1971).

Due to the limitations mentioned above, psycholinguists such as Smith (1971, 1973) and Goodman (1971) have changed the focus of studying letter-sound

correspondence to studying other sources of information internal and external to the text. Goodman (1971) proposes the following model.

1.3.2. The top-down model

This model is well-known as a "psycholinguistic guessing game", which was first established by Goodman (1971). Leaving behind visual decoding, Goodman emphasizes prediction as the core of the reading process which is followed by confirmation or correction. Davies (1995, p.61) describes Goodman's model as "a series of four primary cycles: optical, perceptual, syntactic and meaning, with meaning in the controlling role". Thus, by focusing on the meaning, Goodman (1971) presents a clear contrast to Gough's (1972) focus on a letter-by-letter progression.

L1 readers in their primary language learning stages were used as the subjects of Goodman's study. This was contrary to Gough, who used adult fluent readers as participants of his research. This means that the participants in the studies differ in age and language proficiency. Goodman uses grammatical items to predict meaning. For example, he suggests that the explicit presence of textual cohesive conjunctives in the text increases the possibility of successful prediction.

The emphasis of Goodman (1971) on prediction and guessing at the expense of other text information and the difficulty teachers have come across in applying it have exposed this model to serious criticism. Because of the simplicity of Gough's model many teachers reject Goodman's and return to letter-by-letter process (phonic). Critics argue that choosing L1 beginners to represent the performance of fluent readers is not useful in teaching reading since both groups are different. Furthermore, applying this model to the second language teaching of reading "produced a somewhat distorted picture of the true range of problems second language readers

face" (Davies, 1995, p. 62). This does not mean that this model is not applicable in L2 teaching of reading. Eskey (1988) observes that second language readers benefit from this model.

The observed problems which have increased in the application of the bottom-up and top-down models have encouraged linguists and psychologists to look for a better alternative which can describe the actual process of reading.

1.3.3. The interactive model

Rumelhart (1977) was the first to suggest that both the above indicated models can function together simultaneously by engaging all the information available in the text and in the reader's mind in an interaction process. This 'parallel process' as Davies (1995) describes it, can lead to comprehension which is the final product of the reading process. Davies (1995, p.63) argues that "this model is currently the most influential model underpinning both L1 and L2 approaches to reading." It has the advantage of using all sources of information- visual, orthographic, lexical, semantic, syntactic, and schematic.

According to this model, the process,

> Begins with a flutter of patterns on the retina and ends (when successful) with a definite idea about the author's intended message. Thus, reading is at once a "perceptual" and "cognitive" process. It is a process which bridges and blurs these two traditional distinctions.
>
> (Rumelhart 1977, p.573)

The importance of this model is latent in its flexibility of moving from one piece of information as 'visual' to another as 'orthographic' even for inexperienced readers. This is what promotes it as a good alternative to both the bottom-up and top-down models. In this model, there is no emphasis, for instance, on guessing at the

expense of other sources of information. All information external and internal to the written text has the chance to contribute in the reading process and achieve comprehension.

Davies (1995, p.56) highlights that "the model provides a basis for investigations of the performance, and indeed the processing strategies of different groups of readers under different conditions, L1 or L2". Both L1 beginner readers and readers of the foreign language can benefit from this model since the former have the advantage of exposure to all sources of information, so it is a useful training for them, and the latter need to be aware of both top-down and bottom-up models.

Rumelhart (1984; cited in Davies, 1995) recognized that knowledge of the world (schemata) deserves more attention since the reader "can only interpret visual information and words by relating these to [her/his] prior knowledge and experience;... prior knowledge and experience is seen to be 'packaged' into an infinite number of both general and specific units or schemata," (paraphrased by Davies, 1995, p.66). Because of this, Rumelhart modifies his model by strengthening the focus on the semantic level of processing. He suggests "schemata theory" as an ideal approach to full explanation of the reading procedure. The flexibility and practicality of this model do not protect it from further investigation and evaluation which has led to the suggestion of another model by Rayner and Pollatsek (1989).

1.3.4. The bottom-up interactive model

As the label suggests, the focus of this model is placed on the processing of visual information. Following Rumelhart's experimental procedures Rayner and Pollatsek (1989) chose fluent adult readers as subjects of their empirical studies. Their findings were different from Gough's model in that this model engages

interactive features. This interaction occurs throughout the process between the top-down and bottom-up models. Sophisticated laboratory studies have investigated the relationship between eye movements and cognitive process. Rayner and Pollatsek (1989) observed that in every eye fixation the reader's vision is limited to about fifteen characters, i.e. about one to three words. Fluent readers can automatically recognize the words which give them the chance to quickly interact with higher level sources of information. This explanation of the process does not mean, as Rayner and Pollatsek insisted, that they have got all "the truth about reading", nevertheless, this model does add to Gough and Goodman models some new aspects of reading.

1.3.5. The model that incorporates affective factors

Affective factors such as attitude, motivation, affect and physical feelings are not considered by all the models mentioned above. As cited in Davies (1995) Mathewson (1985) attracted attention to these factors and suggested that such factors are directly engaged in the reading process. In this model, the reading process begins at the level of making the decision to read. When approaching a written text certain attitude which is governed by the reader's values, beliefs and interests, is created. This attitude is influenced by the features of the text such as content, format, and the form of the text. General attitude such as the text's importance and liking are also involved.

Mathewson treated motivation as a distinctive variable and included the desire to know and understand the aesthetic need under it. Moods, sentiment, and emotion are considered as components of the variable affect. The last variable is the physical feeling. This factor arises "from outside sources [and] sometimes occurs during reading, or physical feelings related to the meaning of the reading material itself

sometimes intrude themselves into the reader's consciousness" Mathewson (1985; quoted in Davies, 1995, p.73).

During an academic investigation of the application of the models mentioned above by overseas postgraduate students in a British university, Hedge (1991) observes that some students adopted the bottom-up reading process, a second group engaged in the top-down process and another group integrated both of them. In addition, she notices that L1 and L2 readers used all models simultaneously during the course of reading the same text, especially when they were exposed to difficult texts. Hedge does not suggest a new model after examining the current ones; however, she offers a descriptive framework of reading behaviour. Instead of the label model, Hedge proposes a "mode" for the framework of the reading behaviours she identified. This framework consists of six modes as shown in Table 1 below.

Table 1: Hedge's (1991, p. 304) modes of reading

Reading mode	Description of reading behaviour
Interactive	Uses all available knowledge sources from text to content, genre and world knowledge
Top-down, relative data exclusion	Uses predominantly concept [world, genre, world knowledge] to the relative or selective exclusion of text data.
Top-down, deferred interactive	Uses all available knowledge sources from text to concepts but processes top-down before bottom-up before synthesizing to attain an interactive network of comprehension.
Bottom-up, non- recursive	Uses predominantly text data to the relative exclusion of conceptual knowledge and does not reread or consider previous text.
Bottom-up, recursive	Uses predominantly text-data to the relative exclusion of conceptual knowledge but does reread or consider previous text
Bottom-up recursive, deferred interactive	Uses all available knowledge sources from text to concepts but processes bottom-up, recursive before top-down, before synthesising to attain an interactive network of comprehension.
Bottom-up, non-recursive, deferred interactive	Uses all available knowledge sources from text to concepts but processes bottom-up, non-recursively, before top-down before synthesizing to attain an interactive network of comprehension

As mentioned above, beside the linguistic information existing in the text, it has been noticed that for readers to extract the correct meaning they have to bring to the text external information related to their knowledge of the world. This factor constitutes a vital component of source of information to all the reading models mentioned above with the exception of the bottom-up model.

The reading process is not only affected by all sources of information; internal or external to the text, but also by the motive behind reading, the time available to the reader and the location where reading is taking place. These factors are of a considerable importance to the type of reading the reader is choosing to consider. This is what will be discussed next.

1.4. Types of reading

Types of reading concern the skills or reading styles a student who reads in a native or a foreign language has to be aware of. The ability to use these skills saves a lot of time and effort and facilitates the extraction of meaning from written text. Oral reading is excluded from investigation here, since these skills are directly related to silent reading. These skills include intensive reading, extensive reading, scanning, and skimming.

The contribution of textual cohesive conjunctions in every type of reading skill will be highlighted. Textual cohesive conjunctions have a considerable role in facilitating reading comprehension both in relation to time saving and satisfactory understanding since they work as 'signposts' for the reader and enhance her/his prediction. An efficient reader varies his reading activity according to the information s/he is looking for. S/he may move quickly through the text in order to get, for

instance, a name; this is what linguists call scanning or s/he may want to know the main idea of the text; skimming.

Nuttall (1996) suggests that a reader can approach a written text in different ways. This could vary in speed and purpose of reading. Whether reading activity takes place inside the classroom under the guidance of a tutor or away from the instruction environment are other factors which affect the type of reading. Practicing reading in classroom is called intensive reading and outside it is called extensive or free reading. Experience and the type of text play an important role in facilitating comprehension.

1.4.1. Intensive reading

Reading under the guidance of a tutor is the main factor in this reading skill. The aim of this skill, as Nuttall (1996, p.38) explains, is "to arrive at an understanding, not only of what the text means, but how the meaning is produced. The 'how' is as important as the 'what". The reader silently analyses the text carefully looking for the grammatical relations and the semantic relations which are signaled by language items such as conjunctions to construct the correct meaning of the text. As Brown (1994) explains, the reader looks for grammatical forms, discourse markers, and other surface feature structure details for the purpose of understanding literal meaning, implications, rhetorical relationships, and the like.

Intensive reading or narrow reading, as some linguists call it, is a deep analysis under the teachers' supervision seeking key vocabulary and other conceptual links to construct a meaningful message. Knowledge of the topic and familiarity with the grammar of the text are key factors in facilitating reading activity. Comprehension is achieved with ease if the reader has read a similar text before, which is written by the same author. What distinguishes this skill is that the classroom is the place of the

activity and textual surface features such as cohesive devices and other key words are the target of the reader.

Reading and rereading are important in locating the key text items and getting correct interpretation of the text. Logical relations such as problem-solving and cause and result are some of the text relations the reader works to discover and link together for accurate text interpretation. This could be done by recognizing textual conjunctions such as *however, furthermore, thus, then*...etc. and interpreting them correctly. In this type of reading usually short texts of no more than 500 words are used. Text language should be closer to the language level of the reader and serves the purpose the instructor wants to teach.

It is the responsibility of the teacher to choose the text which suits the language level of his/her students and motivate them to read with ease and enthusiasm. His/her direct supervision of the reading activity is vital throughout the duration of the reading. The teacher is required to train his students to practise intensive reading and to read independently. Feedback and encouragement are very important especially when students are exposed to difficult texts.

This type of reading is not immune from criticism. Many limitations have been observed when applying this technique in teaching reading. Critics such as Macleod, (2004) argue that the choice of short texts as reading materials gives students little time to practise reading. In addition, using the same materials constrains the freedom of choice to read different texts and forces, at least some of the students, to read texts above their language level. Furthermore, the choice of reading text by the tutor ignores the interest of individual students. And finally, associating intensive reading with testing could create a negative attitude towards reading, and short texts

do not include enough language variety which limits the language benefits of the texts. This is why another complementary reading skill is needed.

1.4.2. Extensive reading

Extensive reading is a type of reading activity which is practised away from the classroom and the instruction environment. Reading materials are usually chosen by readers to guarantee suitable choice to her/his purpose and interest. The aim of this skill is to achieve a general understanding of a text (Brown, 1994), and build a self confident and interested reader.

In this reading skill the reader seeks the main ideas or the message of the author with less focus on grammatical and lexical details. As Macleod (2004) states, it is a general understanding of a text with no focusing on difficult and individual words.

Palmer (1917; cited in Macleod, 2004) was the first who proposed the term 'extensive reading' to differentiate it from other reading activities such as intensive reading. Susser and Robb (1990, p.2) describe it as:

Reading a) of large quantity of material or long texts; b) for global or general understanding; c) with the intention of obtaining pleasure from the text. Further, because d) reading is individualized, with students choosing the books they want to read, e) the books are not discussed in class.

The tangible benefits of extensive reading and the role it could play in second language programmes were observed and a call for adopting extensive reading as "standard practice" in foreign language reading courses was heard (Nuttall, 1996; Macleod 2004). Nuttall (1996), again, stresses the benefits which could be gained by implementing an extensive reading programme. Reading capacity, positive attitude,

self-motivation, and language learning in general are some of the advantages of this skill.

Language learning is different from language acquisition in that the first is formal and the second is natural and unconscious. Man acquires a lot by being exposing to language in different forms. However, only limited knowledge is learned. And since extensive reading is practised in natural environments away from instruction, it can be classified as a part of language acquisition which may contribute in promoting reading habit.

Regarding the quantity of reading materials to be used in extensive reading, there is no consensus on the number of words/hour per day, or books per week /months, or even the number of readers per year. Suggestions vary from a few pages a day to two books a week. Many variables are involved in this argument. They may involve the type of the programme, language level of the students and the materials used. However, quantity is not vital in this skill. Susser and Robb (1990, p.3) suggest that,

> Quantity of reading is not an absolute number of hours or pages but depends on teacher and student perception of how extensive reading differs from other reading classes; this will vary according to type of program, level, and other variables.

In general, it can be said that extensive reading can be described as an individual silent reading activity with the purpose of getting information in an enjoyable atmosphere and with the material the reader chooses. However, some times the opinion of teachers in choosing suitable material both in quality and language level is recommended. This makes the suggestion of extensive controlled materials important.

Many language teachers have adopted this reading skill as one of the main approaches of teaching reading because of the following benefits:

Considerable progress in reading habits has been observed by applying this approach. This progress creates a positive attitude towards reading and encourages readers to read more and become independent readers. In fact, more reading produces better general knowledge of the world and high grammatical competence of the target language. However, it is important to teach students how to use the appropriate reading strategies before they are asked to practise their independent reading out of the classroom. For example, students should learn how to use conjunctions in their reading process. The ability to identify these items and recognise their function in signaling the semantic relations existing in the text are vital to easy and productive reading. As Nunan (1999) recommends, items such cohesive devices should be taught in order to benefit from their presence in written texts.

All the advantages mentioned above do not render this extensive reading skill from criticism. Many teachers and linguists have noticed that it is time-consuming and could create a negative attitude toward the reading habit if the written materials are wrongly chosen. Readers may try to read difficult texts but fail to comprehend them correctly. In addition, graded readers could give a deceiving impression of the actual reading accomplishment. Finally, depending on this model to develop reading skill and language competence in a society where reading is not a daily habit of its members has little benefit, since this activity is not an essential part of their pleasure.

Considering the benefits of both the reading types; intensive reading and extensive reading, teachers can use both at the same time. Students could be asked to read a text extensively and while in the classroom they can discuss the same text

together and write a summary of it. As Nuttall (1996, p.38) emphasises, "intensive and extensive reading are complementary and both are necessary".

1.4.3. Scanning

In order to locate specific information such as a date, a name or a symbol a reader moves eyes quickly through the text until s/he finds the target. The reader usually approaches the text with prior knowledge of the form of the item they are searching for, which saves time and effort. Scanning "involves the checking of specific items and hesitations at selected parts of the text" (Davies 1995, p.137). Looking for a telephone number in a directory of more than thousand pages is a hard task unless the seeker has enough knowledge about the first and the last name or the code of the city. All literate people need this skill, especially in fields such as science and technology where numbers and symbols are commonly used. Second language learners need to learn the proper use of this skill to develop reading and language performance in general.

1.4.4. Skimming

Getting the general meaning and how text is organised to make the message of the text clear are some of the purposes of a reader who is using skimming technique. Lunzar and Gardner (1979) define skim reading as a rapid style used mainly to establish what a text is about before selecting the written material for reading.

Skim reading differs from normal reading in that it is practised quickly and does not include reading every detail. This activity may include reading the title, introduction, and the first paragraph. That could be followed by reading headings and subtitles. Looking at pictures and graphs could be useful. This means that the reader

does not have to read every word in the text but focuses only on the key elements which have explicit and direct relation to the main topic.

The ability to use conjunctions when practising this skill could be useful since they can guide the reader, for instance, directly to the conclusion of the text when s/he recognises expressions such as *in conclusion* or *in summary*.

In summary, it can be said that,

> ...it is difficult to draw clear boundaries between the types of reading termed skimming and scanning; in real life, scanning inevitably involves some skimming (and skipping) of large sections of text, and skimming reciprocally must embrace some scanning.
>
> Davies (1995, p.137)

1.4.5. Drawing inferences

With the skill definition reported by Urquhart and Weir (1998, p. 88) which considers a skill as "a cognitive ability which a person is able to use when interacting with written text", drawing inference is classified as one of the reading skills. In agreement with this, Lunzar and Gardner (1979) and Munby (1978) also included this cognitive activity in their taxonomy of skills. For a successful inference, readers need to use conjunctions as a signpost to guide them with more efficiency towards the message the writer wants to convey. Semantic relations such as cause and effect could be easily recognised by the reader if it is made explicit by one of the causal conjunctives such as *because, thus*, and *so*.

When practising the above mentioned skills, the reader behaves automatically and unconsciously to achieve certain reading aims. The behaviours which are intentionally and consciously practised by readers to solve a problem or monitor the reading process are the focus of the following discussion.

1.5. Reading strategies

To facilitate extraction, storage, and retrieval of information from a written text a reader needs to use certain reading strategies. These strategies are defined as "learning techniques, behaviours, or actions; or learning-to-learn, problem-solving, or study skills" (Oxford and Crookal 1989, p.404).

Reading strategies are of two types: learning strategies which are used to help in learning and reading strategies which are applied to upgrade comprehension. Singhal (2001, p.1) highlights that "strategies are processes used by the learner to enhance reading comprehension and overcome comprehension failure".

Hosenfeld (1977b; cited in Davies, 1995) uses the term 'strategy' when it refers to strategies such as guessing, evaluating, summarising...etc.

A hot debate has been going on for some time about whether the term 'strategy' refers to an activity which is deliberate and conscious or whether this activity involves unconscious behaviour.

Davies (1995, p.50) suggests that "a strategy is a physical or mental action used consciously or unconsciously with the intention of facilitating text comprehension and/or learning." It is believed that practical experience in teaching reading supports Davies' (1995) definition since it represents the actual behaviour of many students. It is a comprehensive definition even though it does not provide a clear explanation of when the reader switches from conscious to unconscious behaviour and which behaviour is natural and which one is the exception.

1.5.1. Types of strategies

Davies (1995) states that there are strategies which can be noticed by external observer, since they involve physical behaviour such as marking the text, pausing or

rereading, and non-observed behaviours like structuring sentences, clauses or using background knowledge in prediction. Drawing all strategies, observable and non-observable together, Davies (1995, p.51) proposes the following five types of classification, as shown in Table 2 below.

Table 2 Reading strategy types as classified by Davies (1995)

	Strategy	Process
1	Control reading process	By involving, consciously or unconsciously in an observable behaviour such as marking text, pausing and reflecting.
2	Monitor reading process	By approaching a text deliberately to extract the meaning and evaluate the reading process.
3	Interact with text	By raising questions and expressing feeling.
4	Utilize source of information: textual	By recognizing the linguistic features of the text, activating the linguistic knowledge of the reader, and matching it with the text linguistic features which are taking the form of repetition of words, text structure, and grammar in general.
5	Utilize sources of information: external	By recalling knowledge of the world which relates to the text topic.

This classification does not mean that every category functions independently from others. In actual practice, a reader may use more than one strategy at the same time. Text difficulty and reader's language proficiency play the major role in the application of the suitable strategy.

Knight, Padron, and Waxman (1985) listed thirteen strategies readers can use in reading activity with different frequencies. They are: a) rereading, b) selectively reading, c) imaging, d) changing speed, e) assimilating with personal experiences, f) concentrating, g) assimilating with passages, events or thinking about previous events, h) noting / searching for salient details, j) summarising, k) predicting

outcomes, l) self-generated questions, m) student perceptions of teacher's expectations, and n) rehearsal.

Empirically, many studies have investigated the type of strategies used by successful and unsuccessful readers. These studies have investigated how strategies are applied by readers and examined their reading proficiency.

Testing these strategies on 23 Spanish speaking ESL students, Knight et al. (1985) found that the strategy of concentration had the highest frequency of use while student's perceptions of teacher's expectations had the lowest frequency. They also noticed that FL readers use fewer strategies compared to native speakers. (Awareness of these strategies and the experience of native speakers may be behind these findings.)

1.5.2. The importance of reading strategies

Readers differ in the way of tackling a written text. Some of them consciously use systematic steps with the belief that understanding could be achieved fully and quickly by applying these techniques. Others approach the text without clear strategies in his/her mind depending only on their experience and high language performance. Many linguists and language teachers believe that using strategies such as questioning, predicting, clarifying, and summarising facilitate comprehension and save time. This belief raises the question of how the reader can acquire or learn these strategies.

Song (1998) investigates the importance of using reading strategies by FL readers and whether training in using them could have any benefits. His subjects were classified into three groups; low, intermediate and high reading proficiency. The finding s of his study suggested that low and intermediate readers benefit more from

training programme since it seems that prior to the training programme both groups had little experience in using any strategy. High group readers had already enough experience of utilizing reading strategies effectively.

From the above discussion it can be concluded that efficient readers do use strategies in their reading process. These strategies proved to be useful in facilitating comprehension. Readers use different types of strategies according to their interest and level of understanding. For poor readers, strategies can be taught. Poor readers can learn to recognise and use the reading strategies more effectively by a systematic teaching programme. For example, students learning English as a foreign language can be explicitly taught how to use conjunctions in their reading comprehension. Practicing prediction and summarising could be more successful if readers have the ability to use conjunctions as signals in their reading procedure.

1.5.3. Differences between skill and strategy

The terms 'skill' and 'strategy' have been used interchangeably by many linguists and psycholinguistics to refer to the same reading activity. For example, skimming and scanning are sometimes classified as skills and at other times as strategies. Confusion may occur because of the vague image some linguists have about the nature of the reading process and how the reader engages in it. However, laboratory experiments and classroom observation have verified this confusion and distinctive definitions have been proposed for a skill and a strategy. Cohen (1986, p.133) suggests that "reading strategies refer to those mental processes that readers consciously choose to use in accomplishing reading tasks". By describing strategy as being a conscious activity Cohen distinguishes it from 'skill' which is indirectly

understood as unconscious behaviour. Automaticity is one major characteristic of reading skills.

Carrell (1989) emphasises the distinction between the two terms by describing strategies as a deliberate action practised by readers to solve difficult problem or achieve certain purposes from reading. In addition, Carrell (1989) intentionally uses the term strategies to describe the reader's active role in the reading process, whereas automaticity of practising skills may suggest the passive role of the reader. The ability to activate a certain strategy under certain circumstances is another characteristic of reading strategies. Cohen (1986, p.133) highlights, "... what distinguishes strategies from other processes is the element of choice involved in the selection".

The terms 'select' and 'control' used by Carrell (1989) to describe strategies also emphasise the consciousness of the reader and her/his deliberate intention in using a 'strategy'. Cohen (1986) observes that the reader is always able to describe and explain the strategy(ies) s/he adopts to achieve desired goals though the amount of attention the reader has fluctuates in practising one strategy to another.

Urquhart and Weir (1998, p.96) support Cohen's (1986) and Carrell's (1989) points of view regarding the criteria they suggest for strategies, and draw a clear line between skills and strategies by proposing the following criteria:

- Strategies are reader-oriented while skills are text-consistent.
- Where strategies represent conscious decisions taken by the reader, skills are deployed unconsciously.
- Strategies represent a response to a problem while the same does not apply to skills.

To conclude, it can be said that skills are an acquired behaviour practised automatically by the reader, whereas strategies are deliberate performance selected

and controlled consciously by the reader to achieve certain goals or to solve difficult problems.

1.6. Summary

This chapter has explored the complex nature of the reading skill as a process and as a product. Different definitions of reading as a skill and reading comprehension were presented. Reading theories are discussed with reference to conjunctions. Reading types are explained and differentiated from reading strategies. The next chapter will discuss cohesion: its types and their contribution to reading comprehension. The discussion will focus on textual cohesive conjunctions as one type of cohesion tie and how they can facilitate reading and understanding.

Chapter Two

Cohesion and coherence

2.1. Introduction

Native language fluent readers can enjoy reading unfamiliar authentic texts, at appropriate speed, silently and with adequate understanding (Nuttall 1996). This is because of certain properties in the text. They can also distinguish a collection of sentences put or grouped together and make a decision as to whether this collection is an understandable text or not. Fluent readers have certain criteria which can be used to evaluate any written passage. These criteria or properties are what distinguish text from non-text and make a text easy to understand. For a text to be accessible, it should have a unified meaningful message and certain relations between its components should be present. The reader needs to recognize and interpret these relations correctly in order to understand the message of the text. The nature of these relations and the means by which they are realised are the topics of this chapter.

2.2. Text

By the beginning of the 1960s many linguists (e.g. Halliday, McIntosh and Strevens 1964; Hasan 1968; Quirk, Greenbaum, Leech and Jan 1973; Gutwinski 1976) had challenged transformationalists such as Chomsky (1957) and his theory of transformational grammar. Halliday and Hasan (1976), for example, expressed their dissatisfaction with the restriction of this theory to sentence grammar. This feeling had grown up because of the difficulties they faced in treating such phenomena as coherence and anaphora within sentence grammar rules. Because of that, these

linguists decided to redirect the focus from studying the grammar of the sentence to studying the relationships which connect sentences and form a text.

A text is "a passage of discourse which is coherent in these two regards; it is coherent with respect to the context of situation, and therefore consistent in register; and it is coherent with respect to itself, and therefore cohesive" (Halliday and Hasan (1976, p.23). The relations which exist in the text and unify its components to be meaningful are called cohesion.

A text may vary in length from a single proverb to a whole play or a novel. For Halliday and Hasan (1976), a text can be any piece of writing or oral discourse with a message that forms a meaningful coherent whole regardless of length. So size is not a characteristic of text, as a semantic unit it should have a coherent message. However, boundaries between texts are not always clear. There are many cases in which it is difficult to decide whether a passage consists of one text or more than that. It is only by intuition that such a decision can be made. Nevertheless, a good reader can always follow up the texture (i.e. coherence) and grasp the meaning of the full text. This is because "a text has a texture, and this is what distinguishes it from something that is not a text" (Halliday and Hasan 1976, p. 2). As Van Dijk (1977) reports, coherence is a semantic relation and intuition is a dominant measurement which can be used to distinguish between text and non-text.

Contrary to what Halliday and Hasan argue for, coherence is not always realized by the cohesive devices they proposed, which means that cohesive devices are not a valid method of recognizing where the text starts and comes to an end. Cohesive devices only partly contribute to the coherence of the text. This controversial topic will be discussed later.

According to the description provided by Halliday and Hasan, text has the following characteristics: a) it is a piece of language in use, b) it varies in length, and c) it differs from sentences and clauses. A text is actually,

> Best thought of not as a grammatical unit at all, but rather as a unit of a different kind: a semantic unit. The unity that it has is a unity of meaning in context, a texture that expresses the fact that it relates as a whole to the environment in which it is placed.
>
> (Halliday and Hasan 1976, p.293)

Thus, a text is a semantic unit realized in the form of grammatical sentences.

Certain linguistic features are desirable in a passage to ensure a unified semantic construction. With the exception of the first sentence, every sentence in the text should have some type of relation to the sentence which precedes it. This relation is commonly created by the presence of specific conjunctive cohesive relations such as additive, adversative, causal, and temporal conjunctives. Pronouns and repetitions contribute to the formation of text relations if they refer to the same referent either anaphorically or cataphorically.

De Beaugrande and Dressler (1981) define text as "*Communicative Occurrence* which meets seven standards of Textuality". These standards are cohesion, coherence, intentionality, acceptability, informativity, situationality, and intertextuality. Cohesion and coherence are what concern us here.

2.3. The nature of cohesion

Cohesion in English has been investigated and analysed by Halliday and Hasan from the mid sixties. Their efforts were fully recognized by the publishing of the valuable book (Cohesion in English) in 1976. In this book, the relationships between sentences were the focus of investigation. Relationships within sentences and

clauses were excluded from their analysis because, as they said, these relations are structurally related. Clauses and sentences are structurally cohesive with or without the existence of cohesive ties.

Many linguists (Chapman 1983; Martin 1992; Louwerse, 2000) argue that the insistence of Halliday and Hasan (1976) that only conjunctives joining two independent sentences are cohesive is not justifiable since a sentence such as:

(1) Water is liquid. It can be clear enough to drink or it can be full of mud and dirt, has almost the same meaning if it is written as: Water is liquid. It can be clean enough to drink. *Or* it can be full of mud and dirt. Thus, as far as meaning is concerned, the boundaries between the two sentences are only arbitrary (Chapman 1983, p.87). Both sentences are clear enough for the reader to understand regardless of the conjunctive position.

Linguists such as Martin (1992) include both inter-clausal and inter-sentential cohesive conjunctions in their studies. Written languages have flexible conventions which allow writing sentences in different structure with identical meanings. As Louwerse (2000, p.185) comments, Halliday and Hasan's inclusion of only sentential cohesive devices in their study is "overcautious".

Hoey (1991, p.3) defines cohesion as “the way certain words or grammatical features of sentences can connect that sentence to its predecessors (and successors) in a text”. He reports that textual features such as reference, substitution, and conjunctions are found by many linguists to be "capable ...of casting light on the nature of text itself" (ibid. p.4).

2.4. Types of cohesive relations

Cohesive relations and the means by which they become explicit have been the topic of many linguistic studies since the nineteen seventies. Linguists such as Gutwinski (1976); Halliday and Hasan (1976); and Quirk et al. (1985) dedicated a considerable amount of their time to studying sentence structure and text features with the intention of understanding how a text is built up and the items which contribute to the semantic structure of it.

As mentioned above, cohesion is defined by Halliday and Hasan (1976) as a semantic relation between sentences to form a unified text. The existence of semantic relations in a text is realized by certain grammatical and lexical features. Many of these features contribute to the cohesion of the text. For the concept (cohesion) to be systematically analysed and described, Halliday and Hasan divide its components into a small number of distinct category, grammatical and lexical. Grammatical, such as reference, substitution and ellipsis, others, such as reiteration and collocation, are lexical. Conjunctions, however, are partly grammatical and partly semantic. These conjunctive items are distinguishable in that they do not link sentences anaphorically or cataphorically as reference, for instance, but they explicitly signal certain relationships between the pairs of sentences they connect. This does not mean that these relations are always clear to be studied or distinguished by the reader. Halliday and Hasan try to draw clear boundaries between closely related conjunctions. Nevertheless, some of the relations are still vague.

Halliday and Hasan (1976) classify cohesive relations which are made explicit by conjunctions into four semantic relations: additive, adversative, causal and temporal. These relations are signaled by many conjunctives. For example, the additive is represented by *and*, the adversative by *but*, the causal by *so*, and the

temporal by *then*. This major four category division is followed by a fine description and analysis of conjunctive items which are composed of one word such as *but, and, yet*, and *so* and other phrasal expressions such as *in addition to that, because of that, to sum up*, and *however it is.* This suggested classification, however, is not an exhaustive or an ideal one. As Halliday and Hasan (1976, p. 238) reports,

> There is no single uniquely correct inventory of the type of conjunctive relation; different classifications are possible, each of which would highlight different aspects of the facts.

The following examples clarify the nature of the cohesive semantic relations Halliday and Hasan suggested:

(1) For the whole day he climbed up the steep mountainside, almost without stopping.

a. And in all this time he met no one. (Additive)

b. Yet he was hardly aware of being tired. (Adversative)

c. So by night time the valley was far below him. (Causal)

d. Then, as dusk fell, he sat down to rest. (Temporal)

(Halliday and Hasan 1976, p.238-39)

These types of conjunctive relations may be expressed externally or internally. Many conjunctives which signal these relations can be used both in external and internal textual cohesive relations. This classification, however, is only suggestive since "the line between the two is by no means always clear-cut" (Halliday and Hasan 1976, p.241). The following examples may shed some light on the difference between internal and external cohesive relations:

(2) Osama visited Salli. And he gave her a present. [Internal]

(3) Osama visited Salli. And only her brother knew about it. [External]

(4) Osama visited Salli. Yet he did not admire her. [Internal]

(5) Osama visited Salli. Yet such a visit was not expected. [External]

(6) Osama visited Salli. So her brother got angry with her. [Internal]

(7) Osama visited Salli. So he knew that her brother might beat him. [External]

(8) Osama visited Salli. Then he invited her to lunch. [Internal]

(9) Osama visited Salli. Then there was a heavy shower in the afternoon. [External]

Louwerse (2000) argues that the cohesive relations suggested by Halliday and Hasan (1976) are not always clearly defined and the sub-classification of conjunctions which extends to more than 50 relations complicates the process of understanding and the analysis of cohesion.

Martin (1992) follows Halliday and Hasan's steps in analysing textual cohesive features in more detail and with little addition. In his book (English Text), Martin recognizes the influence of Halliday and Hasan's book (Cohesion in English) on him. He states,

> Like Cohesion in English, English Text uses systematic functional grammar to ask questions about text structure, and complements the grammar by developing additional analysis which focuses on text rather than the clause.
>
> (Martin 1992, p.1)

Martin based his analysis of English language on his understanding that language is a network of relationships and these relationships are realised by explicit and implicit means when used by writers or speakers.

These relations, which are considered by many linguists as an important source of text unity, are classified by Martin into *negation*, *identification, conjunction* and *continuity* and *ideation.* With the exception of *negation,* all the other semantic relations are identical to Halliday and Hasan's (1976) classification of cohesive devices. *Identification* is similar to Halliday and Hasan's reference; *ideation* is what

Halliday and Hasan called lexical cohesion. *Negation,* however, is not related to our topic (i.e. textual cohesion) since it is concerned with oral discourse.

Like Halliday and Hasan, Martin (1992) divides the cohesive conjunctive relations into additive, comparative, temporal and consequential which is similar to causal in Halliday and Hasan's classification. 'Adversative' is replaced by 'comparative' in Martin's classification.

Martin (1992) believes that the existence of cohesive devices is a pre-condition to achieving coherence in a text. This is different from Halliday and Hasan's (1976, p.323) point of view, who recognize that "in the construction of a text the establishment of cohesive relations is a necessary component; but it is not the whole story". Louwerse (2000, p.185) comments that Martin "claims that coherence relations can always be marked linguistically but sometimes remain implicit".

It is worth mentioning here that Martin (1992) has made a valuable contribution to cohesion analysis by his deep elaboration of Halliday and Hasan's cohesive ties. He put a special emphasis on the presence of conjunctives which makes cohesive relations explicit. However, contrary to Halliday and Hasan (1976), Martin includes all the conjunctive items which are present within and between sentences in his taxonomy of conjunctives. His fine-grained taxonomy is considered by Louwerse (2000) a problem because it is over specified. Louwerse (2000, p.189) argues that,

> The biggest problem in Halliday and Hasan's proposal is found in Martin's. The taxonomy is over specified. In Halliday and Hasan's proposal eight basic categories are distinguished, in Martin this number is sixteen (4 × 4). The actual taxonomy is even more fine-grained than Halliday and Hasan's 50 categories with a total of over a 100 categories.

In addition to the unnecessary elaboration, Louwerse observes that there is an overlap between Martin's taxonomy categories. For example, the comparatives

overlap with the temporal simultaneous relations which are expressed by items such as *while* and *meanwhile*. Furthermore, Martin recognizes that the distinction between his categories is not always clear, especially the distinction between external and internal cohesive relations.

The problem of distinguishing between internal and external cohesive relations has been one of Halliday and Hasan's (1976) taxonomy problems too. It is really sometimes vague to give an accurate judgment of whether the relation in the following example is internal or external:

(10) Was she in a shop? And what was that really--was it really a *sheep* that was sitting on the other side of the counter? (Halliday and Hasan 1976, p.245)

Gutwinski (1976) recognizes the important contribution of Halliday, McIntosh, and Strevens (1964) to discourse analysis and the new terms they suggested in this field such as *textual* and *cohesion*. This progress of text analysis has been deepened by the recognition of the grammatical and semantic relations which exist between independent sentences forming text. Working across sentence boundaries has opened the door to more successive studies to discourse structure and text structure. Gutwinski (1976) devotes her book (Cohesion in Literary Text) to discussing cohesion and its application to text analysis.

Since then many linguists, literary critics and teachers of composition and rhetoric have approached written text from different structural angles using the cohesion terms suggested by Halliday and Hasan (1976). This positive environment has encouraged linguists to recognize and analyse more linguistic features, such as coordination, subordination and unity. The features which are constructed by the presence of explicit linguistic items such as conjunctions have attracted the attention of both linguists and teachers of reading skills. The contributions of conjunctions to

text cohesion and reading comprehension have been recognized, and many applications to text analysis and English language teaching have taken place.

Influenced by Halliday and Hasan's cohesion theory, Gutwinski (1976), for example, dedicates two chapters of her book to analysing *James* and *Hemingway* pieces of literature work. He states that "Halliday's statement of cohesion was ...a starting point for [cohesion in Literary Text]". (P. 21)

Comparable to Halliday and Hasan (1976), Gutwinski (1976, p.26) describes cohesion as,

> The relations obtaining among the sentences and clauses of a text. These relations which occur on the grammatic stratum are signaled by certain grammatical and lexical features reflecting discourse structure on a higher semilogic stratum. These features such as anaphora, subordination, and coordination are called COHESIVE.

Cohesion is one of the important characteristics of text, and can be realized by a strong version through grammatical features such as reference, ellipsis and substitution, or it can have a weak form version through lexical cohesion. These terms were used by Ruqaiya Hasan in her doctoral thesis (1964) as (cited in Gutwinski 1976) to distinguish between the grammatical and lexical cohesive features in a text. Hasan (1968) explains that a text has external and internal linguistic features, however cohesion is exclusive only to the internal features. As in Halliday and Hasan, Hasan confines the use of the term (cohesion) to include only inter-sentence relations.

Carrell (1987) labels Halliday and Hasan's point of view that "coherence is created by cohesion" a strong version of relationship. She argues that such a claim ignores the active contribution of the reader in the reading process. According to her, "it is textual coherence which affects cohesion, not the reverse" (Carrell 1987, p.27). However, she accepts the weaker position which states that "cohesion is related to

coherence". This is not to deny that she, after all, recognizes that "cohesion and coherence are the two most basic standards of textuality. They indicate how the component elements of the text fit together and make sense" (ibid. p. 28).

Regardless of the cohesion versions mentioned above, Gutwinski (1976) stresses that text and cohesion are two faces of the same coin, i.e. there is no text without cohesion either in its weaker or stronger form. Gutwinski's (1976) study of cohesion is based on her belief that there is a unity both within and between sentences on the grammatical and semantic levels in text. She emphasizes that,

> The unity of a text which is manifested not only on the relations of clauses in the sentence structure but also in the supra-sentence phenomena suggested the existence of a deeper, unifying structure which underlies the structure of grammar.
>
> (Gutwinski 1976, p.36)

This unity is what motivates the reader to make sense of the text and distinguish it from a random collection of sentences. The importance of order as a precondition to the interpretation of conjunctions is carefully considered by Gutwinski (1976). For example, the interpretation of the following sentences which are connected by *and* differs according to the order of these sentences.

(11) She shouted and the people congregated.

(12) The people congregated and she shouted.

In (11) the people congregated because of her shouting, whereas in (12) she shouted because of the congregation.

In addition to the order of text components, Gutwinski suggests a list of cohesive features in a form of classification recognising that the list is not exhaustive. A quick look at Gutwinski's (1976) cohesive items list shows that her classification and Halliday and Hasan's are similar; however, the difference in manner of

classification and some details can be observed. The only addition Gutwinski had is what she called 'enation and egnation', which can be described at the structural level of sentences. 'Enation' is a type of grammatical parallelism between sentences and 'egnation' is a type of similarity between them. Gutwinski (1976, p.58) justifies the manner and the details of the classification she proposes by saying that her classification,

> Results in a more unified listing of the grammatical features of cohesion and is an improvement from the point of view of explicitness of grammatical items for which a text has to be examined to determine its cohesive features.

She argues that her classification is consistent with cohesion theory and presents a practical descriptive framework for text analysis. For example, she divides the [connective] items which join clauses and sentences in text into coordination and subordination instead of the terms conjunctions, adjuncts and conjuncts used by Quirk et al. (1985) and Halliday and Hasan (1976). However, Gutwinski's uses of these terms are quite different from the way traditional grammar uses them. For her, coordinators include both clause and sentence connectives.

The list of conjunctives Gutwinski (1976) suggests is brief and no explanation of their use is mentioned. This may be due to her focus only on their presence and the relations they signal not on their kind and number. It is clear that (Cohesion in Literary Text) is a book written to shed some light on how a written text could be analysed by the application of cohesion theory. Neither the investigation of cohesive ties nor their pedagogical implications are prime aims for Gutwinski (1976). Analysing written texts by using cohesive ties was her major objective.

2.5. Cohesion and reading skill

Moe (1978) argues that a text with little explicit cohesive relationship is more difficult to understand. If a text lacks explicit cohesive items, the reader needs extra effort to infer the semantic relations which makes the load on the cognitive process heavier. Such a long difficult process may delay or even impede comprehension.

It might be worth highlighting that Moe's (1978) point of view is not based on experimental studies. His argument, however, is only theoretical and could be influenced by cohesion theory which was recently established by Halliday and Hasan (1976). Such an influence is clear from the following citation which discussed Moe's viewpoint about the relationship between cohesion and readability,

> It can be argued that there exists, within text, degrees of comprehensibility which reader independent; the prevailing concept of readability and the application of readability formulas is based on such a premise. It is this writer's contention that the cohesive ties which bind (or bridge) sentences semantically account for a large portion of this comprehensibility in written discourse.
>
> (Moe 1978, p.1)

The impact of cohesion on recall (which presupposes comprehension) is investigated by Irwin (1980). In her study, two texts, one of high cohesion and another of low cohesion, were used as reading materials for testing recall, measuring reading time and giving short answers. Her results suggested that less cohesive text needed more time for recall. However, adult readers, if given enough time, can have the same recall of propositions with both high and low cohesive texts. From these results it can be concluded that texts with high cohesive relations may ease comprehension and speed recall. "Less cohesive prose ... [on the other hand] may require more reading time per proposition recalled than does highly cohesive prose" (Irwin 1980, p. 328-9).

Texts have qualities that an efficient reader can easily recognize. Chapman (1983) relates these properties to order and cohesive construction. These properties are what distinguish a text from a haphazard collection of sentences. Based on this, teachers of reading skill need to,

> Know more about the ability skilled readers have to perceive these factors. For it follows that this ability must have been acquired in some way, and what is more, by a process that has not as far as we are aware, been directly taught.
>
> (Chapman (1983, p.46)

Chapman argues that little has been done to teach students directly the properties of cohesive texts and how they read them. The concept of cohesive tie proposed by Halliday and Hasan has offered a great help to teaching reading because of the practical technique it suggests. This concept "gives teachers and through them, their pupils a notion that they can readily understand the concept of tying things together by means of suitable knots" (Chapman 1983, p.48).

Chapman emphasises the importance of conjunctions as cohesive items which assist reading comprehension. As indicated above, unlike other cohesive items, conjunctions do not function anaphorically, but signal specific semantic relations between the elements they join. Their presence helps in making the semantic relations explicit.

Conjunctives such as *and, yet, so* and *then* are,

> Among the more easily read words and are often to be found in early word lists such as are used in word recognition test, yet as we shall see, these same small words carry a heavy cueing function for the reader.
>
> (Chapman 1983, p.86)

Chapman adopts the semantic classification Halliday and Hasan (1976) assign to conjunctions. He uses the monosyllabic words *and. so, then* and *but* as labels to Halliday and Hasan's cohesive relations' classification. Additive is labeled as *and* group, adversative as *but* group, causal as *so* group, and *then* as temporal group. Chapman (1983) stresses the connecting function of conjunctions in a text and their constraining the meaning towards clear direction by indicating that "conjunctions confirm that the sentence that has just been read is to be connected with the following sentence and that it is the meaning that are to be integrated" (Chapman 1983, p.87).

In her PhD thesis, May Smith (1983) investigates the impact of cohesion on reading comprehension. She examines the effect of all the five cohesion types: reference, substitution, ellipsis, conjunctions and lexical cohesion suggested by Halliday and Hasan (1976) on reading comprehension. Each cohesive type was tested separately. The relationship between cohesive density and understanding was also tested.

Her findings suggested that English language readers benefit from the explicit presence of cohesive items in written texts. Better and faster understandings were observed regardless of the different levels of the impact of the cohesive types on reading comprehension. Some cohesive types such as reference and conjunctions are more effective than substitution and ellipsis.

Taking the linguistic performance of the participants into consideration, both good and poor readers benefit from cohesion in their reading comprehension. Like Halliday and Hasan (1976), she examined only the cohesive ties which exist between independent sentences, since the adopted cohesive theory the framework of her study. For instance, conjunctions operating within sentences are excluded from her

investigation since, as she states, they are "redundant" in that a sentence is structurally cohesive with or without these ties (Smith 1983, p. 7).

Smith's (1983) PhD thesis is considered an important contribution to the study of cohesion and its relation to reading comprehension. However, it has been observed that conjunctives constitute “less than five percent of the cohesive ties in the passages examined" (Smith 1983, p.36).

Hoey (1991, p.4) recognises that cohesive textual features such as reference, ellipsis and conjunctions are found to be "capable... of casting light on the nature of text itself". He (1991, p.5) admits that conjunctions do contribute to the semantic organization of text; nevertheless they should be "treated as part of a larger system of semantic relations between clauses". He describes them as “adjunct-like elements” used by writers to make certain semantic relationships explicit (ibid. p.5).

English contains many grammatical and lexical linking items and the recognition of their presence and functions facilitates reading comprehension. Hoey (1991, p.10) states that “these devices or relationships encourage a hearer or reader to interpret the combined utterances as belonging together in some way". For example, the cohesive devices constrain and clarify meaning. They save the time and effort of the reader and ease the reading process.

In comparing oral discourse and written text, Hoey (1991) observes that written text lacks phonology and interaction. This deficiency can be rectified by the active role of the reader and his/her ability to use the grammatical and semantic resources available in the text. Cohesive conjunctions existing in the text are important source of information which can guide the reader to relate one part of a text to another. These signals can facilitate the reader's task if s/he is able to activate them and recognize the

relationship they signal between sentences. The active reader "looks for signals ... because they make for reading without effort" (Hoey 1991, p 225).

2.5. Cohesion and reading theories

Smith (1983) investigates the relationship between the cohesion types and three theories of reading: bottom-up, top-down and the interactive model of reading. In the first model, which focuses on the recognition of the basic text elements, i.e. letters, words and clauses, the reader recognizes, for instance, conjunctive items among other textual features as an initial step to constructing meaning. This conjunctive recognition may contribute to the facilitation of the reading comprehension because many cohesive items are usually learned by L1 readers at early educational levels. With this assumption, it is believed that conjunctions are recognised early and become a part of the automatic reading process. This may lead to the conclusion that "an increase in grammatical cohesion should correspond to an increase in reading ease" (Smith 1983, p. 23). It is expected that beginners and foreign language readers benefit from this model more than fluent readers since at the initial reading stages their attention is more focused on letters and word recognition.

The top-down model uses semantic and the syntactic clues together with the background knowledge of the reader to enable the reader guess the meaning of the text components. The reader integrates the background and textual information, such as grammatical and morphological features, to construct a meaningful message. These pieces of information help the reader to form certain assumptions. By further reading, the assumptions that the reader forms are either confirmed or revised. And because of

the high frequency of some of the cohesive items, the reader is expected to use them as clues to more hypotheses and predictions.

All cohesive items contribute to the predicting procedure, as Smith (1983) emphasises. For example, conjunctions between adjacent sentences can help the reading prediction by explicitly signaling the type of semantic relation. This relation can be additive if the conjunction is *and,* adversative if it is *but,* causal if it is *so* and temporal if the cohesive conjunction is *then.* However, such a prediction procedure can only happen if the reader is trained to recognize the form, meaning, and the use of these items, as Nunan (1999) recommends.

The discussion above explained to what extent cohesion facilitates reading comprehension by using cohesive elements to have faster and easier prediction. Halliday and Hasan (1976, p.299) argue,

> It is the continuity provided by cohesion that enables the reader or listener to supply all the missing pieces, all the components of the picture which are not present in the text but are necessary to its interpretation.

To get the benefits of the bottom-up and top-down models, as discussed in Chapter one, Rumelhart (1977) integrated them in one interactive model. In this model, the reader has the opportunity to use all sources of information, textual and external, to recognise and guess the words, structures, and the global meaning of the written text. If one source of information fails to supply the meaning or the semantic relation under scrutiny, the other sources are available.

Textual information is of great value to L2 poor readers since, in many cases, they lack the topic knowledge, as in expository text, for example, and the cultural background necessary for them to practise the prediction process successfully. This means that the presence of cohesive features is of great benefit to L2 readers.

Stanovich (1980; paraphrased in Smith 1983, p.26) states that " this theory [the interactive model] explains why poor readers, when having difficulty with word recognition, will sample from the context as much as, and sometimes more than, good readers". In fact, using cohesive devices is a useful alternative reading strategy when readers face difficult vocabulary during reading procedure.

2.6. Relationship between cohesion and coherence

A heated debate has been ongoing since the publication of Halliday and Hasan's (Cohesion in English) about the relationship between cohesion and coherence. The firm stand of Halliday and Hasan about the close relationship between cohesion and coherence and their insistence of no coherence without cohesion has created many reactions. Many linguists have supported their suggestion and many others have argued against it. For example, De Beaugrande and Dressler (1981) argue that for a text to be understandable seven characteristics have to be present in it. Cohesion and coherence are among these properties. They define coherence as "the ways in which the components of the TEXTUAL WORLD, i.e. the configuration of concepts and relations which *underlie* the surface text, are *mutually accessible* and *relevant*" (ibid. p.4).

On the other hand, Carrell (1982, p.482) criticises Halliday and Hasan's theory of cohesion, saying that the theory "operates on the superficial surface structure of a text in establishing the cohesive ties". She argues that Halliday and Hasan (1976) considered cohesive ties as a cause not as a feature of coherence. She insists that coherence is a part of the meaningful text and cohesion helps only in making the coherence explicit. Carrell (1982; paraphrases Morgan and Sellner 1980) state that Halliday and Hasan were mistaken to believe that cohesion is the cause of coherence.

Carrell (1982, p.486) goes further in her criticism and advises "those in second language teaching and research, particularly ESL, not to expect cohesion theory to be the ultimate solution to ESL reading /writing problems at the level of the text."

Brown and Yule (1983) also observe that Halliday and Hasan's focus was on the surface structure of the text at the expense of its message which is more important than the visual connectives. They report that Halliday and Hasan analysed anaphora in short texts, which is easy to recognize. Anaphora recognition in long texts is not as easy as the simple examples they presented. In a long text, "... it is unlikely that it is necessary for [the reader] to travel back each time through the anaphoric chain to the original *expression* to be able to achieve a reference" (Brown and Yule 1983, p. 200).

In agreement with this, Hasan (1999, p.32) comments on Halliday and Hasan's cohesion theory by saying,

> Cohesion markers are not essential to make the text hang together. What necessary to make the text coherent is the syntax of the sentences, the semantic relation between the elements of the sentences, and the organization of the information to provide pragmatic value for the text.

She argues that Halliday and Hasan's (1976) focus was on cohesive ties; however, they neglected the comprehension of the text and the features which make the text comprehensible. Hasan (1999) divides coherence into three elements: (syntactic coherence) is the explicit surface connection with and between sentences; (semantic coherence) is the implicit semantic relations between units of discourse; (pragmatic coherence) is the interaction between the reader and the text, which enables the reader to build up a world picture around the text.

In contrast, Ghadessy (1983) supports Halliday and Hasan's cohesive theory. He states that,

> Halliday and Hasan have justifiably established a discourse category and have demonstrated the significance of text cohesion for the proposition of instructional materials for EFL/ESL students, especially at the secondary and tertiary levels.
>
> (Ghadessy 1983, p.685)

He argues that those who criticise Halliday and Hasan might have misinterpreted the concept of cohesion as postulated by them. The misinterpretation might have been led to the addition of other information which Halliday and Hasan do not mean. Ghadessy (1983) challenges Carrell (1982) to provide a precise and accurate definition of the concept 'coherence' she promotes. He comments, "we know what H and H mean by cohesion. Can we ask Ms. Carrell to provide a definition for coherence?" (Ghadessy 1983, p. 686).

Shamsher (1994, p.70; cited in Hasan, 1999) emphasises that "both the cohesive and the cohering means function side by side in order to present a well bounded text, and that neither cohesion nor coherence can operate in the absence of the other." This, of course, does not mean that texts with no explicit presence of cohesive devices are not found. Brief and concise coherent short texts face us every day especially in commercial advertisements (Taboada 2006).

The debate presented above does not suggest that Halliday and Hasan's (1976) theory of cohesion is no longer important. On the contrary, cohesion theory is vital to both text analysis and teaching reading and writing, especially for foreign and second language learners. Language researchers and linguists such as Williams 1983; Gutwinski 1976 Chapman 1983; Smith 1983; Hasan 1999; Louwerse 2000 among many others stand firm on the accessibility and practicality of the theory of cohesion and its benefit to foreign language learning and reading.

To sum up, cohesive devices including conjunctions are valuable signposts to the F/S language readers because they are heavily dependent on the textual surface

features in their reading process. However, a text can have the value of coherence without the presence of cohesive ties. Native language skilled readers can do without the cohesive devices and extract meaning from a text by following the organization of the text and using their knowledge of the world in a complementary or an integrated form. On the other hand, SL/FL readers need explicit signals to assist them in practising prediction and directing the path of inference. The cohesive ties' presence in a written text is of a great assistance to foreign language readers if they understand how they operate and use them appropriately.

2.7. Cohesion, coherence and comprehension

In his research, Louwerse (2000) answers the question of whether cohesion in a text supports coherence in comprehension. With the assumption that text has cohesion and coherence, Louwerse distinguishes between local and global cohesion and coherence. He defines cohesion as "continuity and consistency in the text and coherence as continuity and consistency in the mind" (ibid. p. 314). In so doing, he comes to the conclusion that comprehension needs both in the reading process.

He recognises that cohesion is different from coherence by describing cohesion as the explicit linguistic information used for text analysis and coherence as the textual information used for text interpretation. This does not mean that cohesion and coherence are two faces of the same coin. Actually, as mentioned above, cohesion contributes to coherence; however, text can be coherent without cohesion. This viewpoint contradicts Halliday and Hasan's (1976) argument that cohesion is a pre-condition to coherence, even though it is not the only condition. On the other hand, "coherence is not necessary for cohesion, as it cannot affect cohesion in any way" (Louwerse 2000, p.5).

Louwerse (2000) divides cohesion and coherence into two categories: vocabulary-driven and grammar-driven cohesion and coherence. Vocabulary- driven cohesion is another label for what Halliday and Hasan (1976) and many other linguists call lexical cohesion. Concerning the relationship between cohesion and coherence, grammar-driven cohesion assists vocabulary driven coherence, whereas the former is not necessary for the latter. In other words, a text with lexical cohesion can be understood without the presence of cohesive devices. Such cases only exist in oral discourse and could be observed in child speech before four years old. In written texts both grammatical and lexical cohesion integrate to form a readable message.

In addition, Louwerse distinguishes between local and global cohesion. The first concerns the relationship between adjacent sentences, whereas global cohesion connects many sentences or paragraphs existing in different places in the text. Louwerse (2000, p.9) emphasises that "the distinction between local and global cohesion / coherence is important, because both local and global cohesion cue comprehenders how to organize the comprehension process." Both local and global cohesion complement each other to help the reader form the correct representation of the text.

Adopting Givon's (1995) classification of cohesion items, Louwerse (2000) suggests five "strands": referential, temporal, locational, causal and additive. These strands can be realized in the text as grammar-driven or vocabulary-driven relations. This means that cohesion strands and cohesion relations are not the same thing. 'Strand' is a word chosen by Louwerse to cover all cohesive devices regardless of their functions in the text. For instance, *this* is a referential cohesive item which can create a grammar-driven relation.

By using a computational model, which he described as "precise and productive", Louwerse (2000) examines the effect of cohesion types on comprehension and has the following findings:

1. Aspects of comprehension such as recall and time are positively affected by cohesion.
2. Cohesion affects coherence, which makes reading easier.
3. Causal and temporal cohesive strands are more effective than locational type in reading comprehension.
4. Negative relations and positive relations take the same reading processing time, contrary to what many other studies have come out with.

The position of the cohesive item in the sentence may, however, affect the speed of reading. But no impact on comprehension was observed.

These findings are compatible with the findings of many other studies (e.g. Millis and Just, 1994; Caron, Micko and Thûring, 1988; Chung, 2000; Degand and Sanders, 2002; Chaudron and Richards, 1986; Sanders and Noordman, 2000; Ozono and Ito, 2003; Chapman 1983). This does not mean that all conjunctive cohesive items have the same level of positive effect on reading comprehension. Diverse findings suggested that some conjunctive types are more facilitative to reading comprehension than others. The literature related to this topic will be reviewed in Chapter Four. But in general, the explicit presence of conjunctions in a text is better for the FL readers than their absence. Their absence from the text opens the door to many possible interpretations which consume time and effort.

2.8. Summary

In this chapter, text which benefits from cohesion and coherence for its understanding is defined and distinguished from non-text. That is followed by

presenting a variety of definitions proposed for cohesion by many linguists and language teachers. The types of cohesion are explained in relation to the cohesion theory of Halliday and Hasan (1976). The relationship between cohesion and coherence is discussed with reference to their relation to reading comprehension and some of the reading comprehension theories such as bottom-up, top-down, and the integrated model. And finally, the debate about the relationship between cohesion and coherence is critically discussed and their importance to the reading process and reading comprehension is highlighted. Conjunctions as one of the cohesive devices will be the focus of review in the next chapter.

Chapter Three

Conjunctions

The literature related to cohesion and the development of cohesion theory has been reviewed in Chapter Two. Cohesive relations as suggested by Halliday and Hasan (1976) were explored with a specific focus on conjunctions. The relationship between cohesion and coherence and different points of view related to the nature of this relationship were discussed. Cohesion in relation to reading theories and reading comprehension were also highlighted.

This chapter will present an overview of the literature related to the nature of conjunctions as important cohesive ties proposed by Halliday and Hasan (1976). This will include reviewing their syntactic and semantic features. The conjunctive taxonomies suggested by many linguists and the way they are distinguished from other grammatical items such as coordinators and subordinators will be discussed.

3.1. Introduction

Since linguists have shifted their focus from studying the sentence and its components to the study of text as a unified semantic structure, they have been investigating the elements which contribute to text unity. The theory of cohesion suggested by Halliday and Hasan (1976) shed some light on the factors which create cohesion in oral and written text. As mentioned in Chapter Two, many factors contribute to the coherence of written text. Cohesion and its cohesive ties play a vital role in joining text segments together. It is believed that what Halliday and Hasan (1976) label as conjunctions/conjunctives, which are used in a different sense to their

use in traditional grammar, can be used by writers to make certain semantic relations explicit and help readers in extracting the meaning from text easily.

Several languages have been studied with the intention of identifying these items and the function they have in the semantics of these languages (e.g., French, German, Italian and Spanish). English language conjunctions, however, "are probably more extensively covered in the literature than those of any other language" (Jucker and Ziv 1998, p.2).

Many linguists have tried to build a theoretical status to conjunctions by focusing on studying their identity, meaning and functions in oral and written discourse. Individual conjunctive items are also studied in detail with the hope of suggesting recognisable criteria which can be used to distinguish conjunctions from other lexical items.

3.2. Conjunction identity

With the exception of Gutwinski (1976) and Knott and Dale (1993) who examined conjunctions in written texts, other studies have not distinguished between oral and written discourse in their investigation since, as Jucker and Ziv (1998, p.4) argue, "the difference between oral and written discourse feature ... is not particularly helpful as a diagnostic for the class of [conjunctions]."

Several studies investigating the identity of conjunctions have been found in the relevant literature (e.g., Schiffrin 1987 and Fraser 1998, 1999, among many others). Other linguists such as (Halliday and Hasan 1976, Gutwinski 1976, Chapman 1983, Knott and Dale 1993, Knott and Mellish 1996, Louwerse 2000, Taboada 2006) study conjunctions indirectly under larger topics such as cohesion and coherence.

However, so far there has been no consensus either on the label given to these conjunctive ties or on a unified single definition to these items.

Various terms have been used to refer to these conjunctive elements. These terms include discourse connectives (Blakemore 1987), discourse markers (Schiffrin 1987, Fraser 1998, 1999, and Taboada 2006), cue phrases (Knott and Dale 1993), and semantic conjuncts (Quirk et al. 1985). Many other labels mentioned by Fraser (1999), such as pragmatic expressions (Erman 1992), pragmatic particles (Ösman 1995), discourse operators (Redeker 1990, 1999), discourse particles (Schourup 1985), pragmatic connectives (Van Dijk 1979 and Stubbs 1983).

This study; however, will use the term 'conjunction/ conjunctive, as a label for the items under investigation, following the cohesion theory which is adopted as the theoretical framework for this thesis. These diverse labels represent the different points of view towards the identity of conjunctions. This has been realised by the various definitions linguists assign to these items, the number of elements included in the taxonomy they suggest, and by the variety of functions assigned to conjunctions when they are used by writers. Because of this, in the literature of conjunctions, many classifications with different meanings and functions exist. However in this study, Halliday and Hasan's (1976) classification with the meaning and the functions they assign to conjunctions are the focus.

As highlighted by Fraser (1999, p. 932), the study of conjunctions "has turned into a growth industry in linguistics, with dozens of articles [and books] appearing yearly". This large concern by linguists represents the importance of these items in the fields of text analysis and the teaching of reading and writing.

Since the publication of Cohesion in English by Halliday and Hasan (1976), the nature and the function of conjunctions have been clarified and linguists have

recognized them as independent linguistic items which deserve to be studied thoroughly. These studies cover the presence of conjunctions in both oral and written discourse. In this study, conjunctions which can be clearly used in written text will be investigated since reading comprehension is our concern. Many items classified by linguists as conjunctions and directly related to oral discourse will be excluded. Items such as *well, now* and many other interjections such as *oh, ah* will not be investigated here. However, because of the difficulty in distinguishing between oral and written conjunctions, most of the studies published so far deal with them indiscriminately.

Conjunctions are investigated by Halliday and Hasan (1976) as one of the cohesive ties which contribute to the cohesion of text. They distinguish these conjunctive items from other cohesive ties in that they "express certain meanings which presuppose the presence of other components in the discourse" (ibid. p. 226). As cohesive ties, they signal different types of semantic relations between the independent sentences they connect. Thus, the function of conjunctions is to "relate to each other linguistic elements that occur in succession but are not related by other structural means" (Halliday and Hasan 1976, p.227).

Halliday and Hasan suggest that the semantic relations which impose on un-structurally related sentences to be called conjunction, and the elements which make these relations explicit are called conjunctions, conjunctives, adjuncts or discourse adjunct. So, the example,

(1) He was uncomfortable. *Nevertheless* he fell asleep,

has an adversative relation imposed on the linked sentences by the conjunctive expression *nevertheless*. It may deserve mentioning here that the term discourse is used by Halliday and Hasan (1976) to cover both oral and written text.

Levinson (1983) identifies the conjunctive expressions in English and the semantic function they signal in both oral and written discourse. He describes the conjunction phenomenon and the conjunctives which make the semantic relations in the text explicit as follows,

> ...there are many words and phrases in English, and no doubt most languages, that indicate the relationship between an utterance and the prior discourse. Examples are utterance-initial usages of *but, therefore, in conclusion, to the contrary, still, however, anyway, well, besides, actually, all in all, so, after all*, and so on. It is generally conceded that such words have at least a component of meaning that resist truth conditional treatment... what they seem to do is indicate, often in very complex ways, just how the utterance that contains them is a response to, or a continuation of, some portion of the prior discourse.
>
> (Levinson, 1983, p. 87-88)

Similar to Levinson (1983), Fraser (1999, p.936) defines conjunctions as "lexical expressions do not contribute to the propositional content of the sentence but signal different types of messages." Fraser (1998, 1999) has worked on the recognition of the conjunctions' identity and on their grammatical and semantic features. His research findings suggest that a conjunction is a linguistic expression which " (a) has a core meaning which can be enriched by the context; (b) signals the relationship that the speaker intends between the utterance the [conjunction] introduces and the foregoing utterance (rather than only illuminating the relationship) " (Fraser 1999, p.936).

3.3. Grammatical features of conjunctions

A close reading of the etymology of conjunctions shows that, basically, they used to be simple linguistic expressions realized mostly in single words or phrases. Conjunctive expressions are related to the language category: adverb and preposition.

Many conjunctions are identical in form to the co-ordinators and subordinators used in traditional grammar. Some of them are constructed of more than one item such as *therefore* and *thereby* which are made up of a preposition and a reference item. They are distinguished from other normal lexical or grammatical items by the function they have in the text.

Two main grammatical categories contribute to the construction of the conjunctive expressions recognised by Halliday and Hasan (1976) as cohesive items: adverb and preposition. They divide conjunctives according to their form into three kinds as shown in Table 3 below.

Table 3 Grammatical categories of conjunctions according to Halliday and Hasan (1976, p.231)

1. Adverbs	Simple adverbs		*e.g.: but, so, then, next*
	Compound adverbs in-*ly*		e.g.: *accordingly, subsequently, actually*
	Compound adverbs in *there-* and *where*		e.g.: *therefore, thereupon, whereat*
2.Other compound adverbs			e.g.: *furthermore, nevertheless,, anyway, instead, besides*
	Prepositional phrases		e.g.: *on the contrary, as a result, in addition*
3.Prepositional expressions with *that* or other reference item		(i) optional	e.g.: *as a result of that, instead of that, in addition to that*
		(ii) obligatory	e.g.: *in spite of that, because of that.*

Many conjunctions which originated from adverbs and prepositions can replace each other and actively play the same semantic function in text. For example, the adverb *therefore* can be roughly replaced by *because of this* which is a prepositional expression. As Halliday and Hasan (1976, p.232) emphasise,

> This is because conjunctions express one or other of a small number of very general relations, and it is the conjunctive relation rather than the particular nominal complement following the preposition that provides the relevant link to the preceding sentence.

Basically, conjunctive expressions occupy the initial position of the sentence attached to; however, many exceptions are found in the literature of conjunctions. With the initial position, the meaning of the conjunction extends to cover the whole sentence if it is not terminated by another conjunction. In written text, the conjunctive expression is usually separated from the sentence by a comma or a semi-colon and preceded by a semi-colon or a full stop. Conjunctions can also be found in the middle and final position with the same impact on the hosted sentence unless its domain is limited by another conjunction.

Halliday and Hasan (1976) distinguish between coordinating relations and conjunctive relations. They argue that the coordinate relation is structural in nature which occurs between elements of the same sentence as:

(2) Ladies *and* gentlemen are welcome.

And in this position is a coordinator. Whereas *and* can operate conjunctively when joining two independent sentences. With this function, *and* is termed by Halliday and Hasan as the *additive and.* Thus, we have *coordinate and* which is structural and *additive and* which is semantic. Generally speaking, coordinated elements can replace each other with no impact on the meaning of the sentence they form, whereas elements joined by conjunctive expressions can not replace each other without change of the meaning in most cases.

As stated by Halliday and Hasan (1976, p. 237), *and* has a unique position among other conjunctions in that it differs from them in the following specific properties:

(i) It is expressed structurally in the form of coordination as mentioned above.

(ii) It is retrospective since it can link a series of elements related to the same argument.

(iii) It has a correlative form, *both...and.*

(iv) It has a negative form *and not* which is similar to *nor.*

Other conjunctions however do not have these properties, though *but* includes the additive meaning of *and* which is equivalent to *and however*. Other conjunctives lack this meaning. Thus, *and yet*, *and so*, and *and then* can be used to express *addition* plus the basic semantic relation of the conjunctive preceded by *and.*

Similar to the coordinator *and*, some conjunctions can be used as normal vocabulary, as in the following examples:

(3) Since Friday, nobody has called me.

(4) I met Sali and her mother in the market.

Adverbials can also be used as conjunctive items in certain contexts, whereas in other contexts they can function differently:

(5) I gave up drinking. *Equally*, I gave up smoking.

(6) I consider all students equally.

In the same way, some prepositional phrases can be used as conjunctions; however, in other cases they are vague, as in the following examples:

(7) We should buy some drinks and cakes for you. *After all*, you are our guest.

(8) We bought nothing after all.

So it is the context where the grammatical item occurs which classifies it as a conjunction or just a normal vocabulary in text.

Quirk and Greenbaum (1973) discuss conjunctive expressions under the term 'conjuncts'. Grammatically, they divide conjuncts into adverbs/adverbial phrases and prepositional phrases. Differing from Halliday and Hasan (1976), they state that some adjectives can be used as sentence connectors, as in the following example:

(9) He handed in a good essay. His *previous* essays were all poor.

(Quirk and Greenbaum 1973, p.286)

According to Quirk and Greenbaum (1973), most of the conjuncts are restricted to the initial position of the sentence they attach to. A small number of conjunctions occupy the middle position and only few items can be found in the final position, such as *anyway, otherwise*, and *though.*

Sometimes conjunctions occur as correlatives to emphasize a certain meaning as in the example,

(10) *Though* he is poor, *yet* he is satisfied with his situation.

Because of the nature of Quirk and Greenbaum's book, traditional grammar was their prime objective. No elaboration about the nature of conjunctions was included. For instance, whether they are conceptual or procedural is not clearly stated. Beside connectivity, no other properties of conjunctions are mentioned clearly in their discussion.

In his (1998) study, Fraser examines the syntactic aspects of the contrastive conjunctions, which include the structure in which they exist and the position they occupy in a sentence. He states that conjunctions could occupy the initial, middle, and final position of the hosted sentence, either alone or with other contrastive conjunctions.

Fraser (1999) reports that conjunctions as linguistic items are originated from different grammatical categories. They may take the form a co-coordinator/ subordinator, adverb, and prepositional phrase. In agreement with Halliday and Hasan (1976), Fraser recognises only the cohesive items which join two independent sentences as conjunctions. Their position, however, is not restricted to the initial position of the sentence. Middle and final positions are also possible, as the following examples show:

(11) Harry is old enough to drink. *However*, he can't because he has hepatitis.

(12) It is freezing outside. I will, *in spite of this*, not wear a coat.

(13) We don't have to go. I will go, *nevertheless.*

(Fraser 1999, p.983)

3.4. Classification of conjunctive relations

Halliday and Hasan (1976) include the conjunctions defined above under what they describe as the phenomenon of cohesion. They recognise that various classifications for this phenomenon are possible since so far no consensus on a single exhaustive classification has been found in the literature of conjunction. Halliday and Hasan (1976, p.238) argue that,

> There is no single, uniquely correct inventory of the types of conjunctive relation; different classifications are possible, each of which would highlight different aspects of the facts.

More than 20 years after Halliday and Hasan (1976) suggested their conjunctive taxonomy, Schourup (1999) recognises the difficulties linguists face when studying conjunctions since,

> Unsurprisingly, for an area in which interest so is widely based, [conjunctions] have been investigated within a large number of frameworks reflecting divergent research interests, methods, and goals. With the profusion of approaches have come inevitable disputes concerning classification and function.
>
> (Schourup 1999, p.228)

Halliday and Hasan (1976) adopt a scheme of four categories: additive, adversative, causal, and temporal. Their taxonomy includes conjunctions such as *and, yet, so*, and *then,* which represent simple conjunctive relation, and other conjunctions such as *furthermore, nevertheless, to this end,* and *thereupon,* which represent

complex relations. Conjunction as a cohesive relation is reviewed in more detail in Chapter Two.

Readers may observe here that Halliday and Hasan did not directly investigate conjunctives, but focused on the semantic cohesive relations which are realised by their explicit presence. This four category classification is fine-grained into long detailed sub-classifications. This suggested sub-classification is quite complex, as Halliday and Hasan (1976, p.239) recognise. They emphasise that,

> A very simple overall framework like this [four category classification] does not ELIMINATE the complexity of the facts; it relegates it to a later, or more 'delicate' stage of analysis.

A close look in Halliday and Hasan's taxonomy table reveals that many conjunctive expressions are repeated under more than one relation, (see appendix 5.5 for full classification of the conjunctive types). For instance, the conjunctive *then* is classified as a temporal and as a causal. Furthermore, some of the conjunctives are described as simple and others as complex with no systematic criteria or theoretical basis for this. They also divide conjunctive relations into two planes: external and internal which are quite hard to distinguish between.

Louwerse (2000, p.182) argues that the boundaries of the conjunctives classified by Halliday and Hasan (1976) are "much harder to describe." Moreover, the semantic relations are not clearly defined, which causes overlap between them.

Under the heading of conjunction, Halliday and Hasan (1976) mention other conjunctive items which they term as continuatives. These items (e.g., *well, now*) are more related to oral discourse rather than written texts. These conjunctive items are identical to what Schiffrin (1987) and Hansen (1997) call discourse markers. Such items are not investigated in this work since they are rarely used in written texts. .

Gutwinski (1976) investigates conjunctions under terms such as coordination and subordinations and connectors. She states that both coordinators and subordinators are types of connectors even though some of them join clauses and many others join sentences. According to her, both of them are considered cohesive items. However, when the conjunctive items are used between clauses, she calls them coordinators, and when they operate between independent sentences, she labels them connectors.

Like Halliday and Hasan who used the term conjunction differently from its traditional grammatical use, she uses the terms coordinators and subordinators in a different sense from their use in traditional grammar. She based her argument on the assumption that,

> The connectivity of two or more sentences due to the presence of connectors whose function is to link these sentences into a morphologic construction larger than a single sentence is essentially of the same kind as the grammatical connectivity, marked also by connectors, of clauses within a sentence.
>
> (Gutwiniski 1976, p.73)

But, for example, can be used both as a clause connector and as a sentence connector. Gutwinski believes that both of these relations indicate coordination. In her analysis, she divides conjunctions into two categories: coordinating connectors and subordinating connectors.

Regardless of her emphasis on using the terms coordinators and subordinators as labels for the conjunctions she investigates, the sub-classifications under these headings are identical to Halliday and Hasan's (1976) taxonomy of conjunctions. For instance, under coordinating connectors, she classified additive and adversative conjunctions, and under subordinating connectors, she listed causal and temporal

conjunctive relations. However, unlike Halliday and Hasan, the number of conjunctions she mentioned is limited compared to the detailed classification proposed by them. She justifies her rather general brief classification by saying that working on a complete list of conjunctions is not her prime concern, "it is the existence of [the] cohesive relations rather than their kinds which interests [her]" (Gutwiniski, p. 1976, p.75).

A close reading of her work reveals that individual conjunctive types are not thoroughly discussed. There is no individual explanation to any of the conjunctive items mentioned in her classification. However considering the time when her book was first published, it can be said that her work is an important contribution to the application of the theory of cohesion in discourse analysis. It was a clear recognition from Gutwinski that conjunctions play a vital role in the semantic of written texts.

Conjunctions under the label of discourse markers were discussed by Zwicky (1985). He published an article emphasising the importance of conjunctions as a finite linguistic class in English. He indicated that “on the ground of distribution, prosody, and meaning... they are independent words rather than clitics..."(Zwicky 1985, p.303).

Commenting on Zwicky's work, Fraser (1999, p.933) argues that “Zwicky does not provide supplementing evidence that what he holds to be discourse markers form a class." However, Zwicky emphasised that conjunctions should be distinguished from other function words, since they are commonly realised in mono-morphemic form with a few items realised in complex forms. His argument was based on his recognition that these items are syntactically isolated from the rest of the sentence they attach to. Orally, they are separated from the rest of the context they occur in by pauses, intonation breaks or sometimes by both. In written text, they are

separated from the hosted sentence by a comma. Their presence within sentences with no separating punctuation means that these items are just normal words and have nothing to do with the conjunctive function.

Following the steps of Halliday and Hasan (1976), Martin (1992) dedicates his book English Text to the analysis of the resources of cohesion in English. He investigates conjunctions as important items in discourse semantics (i.e. the semantics of text as he explains it). Martin (1992) classifies what he calls *logico semantic relations* into four types: additive, typified by *and*, adversative which is split by Martin into concession (typified by *although*) and contrast (typified by *whereas*). Then, concession and causal are grouped under sequential heading, and contrast and similarity are grouped under the heading of comparison. Thus, the final classification includes additive, comparative, temporal and consequential. (See appendix 5.6 for the classification of logico-semantic relations in English)

Unlike Halliday and Hasan (1976); however, Martin (1992) includes both conjunctive expressions which join sentences and conjunctions which link clauses in his taxonomy.

Martin's taxonomy is preferred by Louwerse (2000, p.190) because it "provides tools to determine to which category a conjunction belongs. It also reduces arbitrary relations, like ADVERSATIVE relations defined in Halliday and Hasan's taxonomy". Yet, Martin's taxonomy "is far too fine-grained to be useful in discourse analysis...because the categories at the lower end of the taxonomy remain unexplained and are far too detailed for an efficient taxonomy" (ibid. p.190).

It is clear that both Halliday and Hasan and Martin have the same objective: it is the analysis of text rather than clauses or sentences. Martin (1992, p.1) recognises that,

> Like Cohesion in English [by Halliday and Hasan], English Text uses systemic functional grammar to ask questions about text structure, and complements the grammar by developing additional analysis which focus on text rather than the clause.
>
> .

Commenting on the classification of the conjunctive relations suggested by Halliday and Hasan (1976) and Martin (1992), Knott and Mellish (1996) argue that Martin's taxonomy does not clarify the extent of every conjunction and its clear relation to other conjunctions. This overlap between categories opens the door to other possible classifications similar to the one they suggested.

Fraser (1998) focuses on the contrastive conjunctions of English. After repeating the definition of conjunctions he suggests (i.e. an expression which signals the relationship of the basic message to the foregoing discourse) in many of his published papers, he lists a group of conjunctions as a corpus of his study. The list consists of about twenty, one conjunctions starting from *although* and finishing with *whereas*. The list which Fraser assembles under the title contrastive is similar to what Halliday and Hasan (1976) termed adversative of which the contrastive conjunctions are just a subdivision.

A close reading of the contrastive conjunction list suggested by Fraser and Halliday and Hasan's contrastive list reveals that about 80 per cent of the conjunctives included in both lists are identical. Only a few phrasal expressions such as *be that as it may* and *in comparison with* are not found in Halliday and Hasan's taxonomy. *In fact* and *to tell you the truth* are not in Fraser's group.

Since both lists are almost identical, it is not clear why Fraser chose the term contrastive instead of adversative, which was established by Halliday and Hasan in 1976. Fraser unconvincingly justifies his choice by saying that,

> I can offer no precise definition of what qualifies as a contrastive [conjunction] and I have selected the term 'contrastive' as a cover term intended to convey the sense of the class [conjunction].
>
> (Fraser 1998, p. 303)

In addition, he argues that in some cases the conjunctions which Halliday and Hasan (1976) grouped under the label 'contrastive' may signal more than a simple contrast. Based on this, Fraser (1998, p.306-7) divides the group of contrastive conjunctions into three classes according to their related meaning:

1. The first group, which includes *but,* "signal that the speaker intends the explicit message conveyed by S2 to contrast with an explicit or indirect message conveyed by S1"
2. The second class "signal that the speaker intends the explicit message conveyed by S2 to correct a message conveyed by S1, which the speaker accepts." *Instead* is one example of this group.
3. The third group "signal that the speaker intends the explicit message conveyed by S2 to be correct while the message conveyed by S1 to be false," *on the contrary, quite the contrary* and *contrawise* are all the members of this group.

This fine-grained taxonomy does not mean that members of the same group can replace each other. It is the context which provides a suitable environment for using each contrastive conjunction.

For instance, in the example,

(14) Bill lost the 400m last year. { √ But / √ Despite this } he should win this year.

(15) Bill should win the 400m. { √ but / # despite this } they're running at altitude this time.
He lost last year

(Knott and Mellish 1996, p. 160)

Despite this which is classified by Fraser as a sister to *but* is not semantically accepted in (15).

The second class is sub-divided into elaborative conjunctions such as *furthermore* and *similarly*; inferential conjunctions such as *accordingly* and *on that condition*; reason conjunctions such as *because* and *since*; and topic change conjunctions which include *by the way*, *before I forget* and *with regard to*. This division has no equivalence in Halliday and Hasan's (1976) classification since it is a mixture of addition and causal relations.

Fraser (1999) excludes three of the eleven items Schiffrin (1987) classified as conjunctions, *oh, y' know* and *well,* from his taxonomy. He also excludes *I mean* and *because* which he argues do not obey the non-truth-conditionality criterion. *Now* also is a controversial item. Five of the eleven conjunctions Schiffrin (1987) studied are included in Halliday and Hasan's taxonomy. They are *and, but, or, then*, and *so*.

Schourup (1999, p.239) comments on Fraser's definition and the classification he suggests for conjunctions by stating that,

> Fraser's definition includes the two elements shared by most other [conjunctions'] definitions: non-truth-conditionality and connectivity. Nevertheless, Fraser's definition and the framework in which it is set have not met with universal acceptance.

Furthermore, his inclusion of the items which signal only relations between adjacent discourse elements is criticised by many linguists since such items do not contribute to the global coherence of written/oral discourse.

Knott and Mellish (1996, p.146) suggest a test to classify conjunctions into synonyms and antonyms. What they call a substitution test can be summarized as follows: "the tester chooses a context where one [conjunction] X naturally occurs, and

decides whether (s)he, as a writer, would be prepared to replace it with another [conjunction] Y." Possible replaceable items are considered synonyms and other irreplaceable items are either antonyms or could be classified under other categories as hyponyms of a higher superordinate. This test has four possible substitutability relationships between two conjunctions X and Y:

- X and Y are synonymous if in any context where one can be used, the other can be used. For instance, the phrases *to start with* and *to begin with* can be classed as synonymous.
- X and Y are exclusive if they can never be substituted for one another in any context. For instance, *to start with* and *alternatively* are exclusive.
- X is a hypernym of Y- and Y is a hypernym of X - if whenever Y can be used, so can X; but there are some contexts where X can be used and Y cannot. For instance, *and* is a hypernym of *whereas*: *whereas* can always be substituted by *and,* but there are some contexts where *and* can not be substituted by *whereas.*
- X and Y are contingently substitutable if there are some contexts where they can be substituted, other contexts where X can be used and not Y, and still other contexts where Y can be used and not X. *And* and *but* are contingently substitutable. (Knott and Mellish 1996, p.147)

In summary, a consensus on a single classification of conjunctions is a far away ambition and an exhaustive recognised list of their functions is almost a dream because of the diversity of linguists' interests, methods and goals. These various interests and methods have led to the suggestion of different terms used in describing the items under investigation. Every linguist tries to justify the terms s/he uses by suggesting certain characteristics of the terms they adopt.

3.5. Conjunction properties

For the conjunctions to be recognised as a linguistic category, they have to share certain properties. Three characteristics are vital to conjunctions' distinction. As Schourup (1999, p.232) suggests "connectivity, optionality, and non-truth-conditionality are all frequently taken together to be necessary attributes of [conjunctions]."

1. Connectivity: this is an essential property which distinguishes conjunctions from other lexical items. Most definitions of conjunctions highlight this criterion. For instance, Hansen (1997, p.160) defines [conjunctions] "as linguistic items of variable scope, and whose primary function is connective." However, Quirk et al. (1985) argue that connectivity alone is not enough of a criterion to classify an item as a conjunction. They emphasise that connectivity in addition to separation from the hosted sentence are necessary to recognise the item as what they call adjunct.

2. Optionality: means the presence of conjunctions in the sentence is not grammatically essential, and their removal does not affect the meaning of the joined sentences. However, the semantic relationship between the conjoined sentences is no longer explicitly present to the reader. Actually, the reader is left with no signal or guide towards a particular interpretation.

3. Non-truth-conditionality: means conjunctions are procedural items suggesting certain relations to the linked sentences. They are not conceptual items since their omission does not affect the meaning of the sentences they join.

Other properties which can be used to distinguish a conjunction from other language vocabulary are suggested by Schiffrin (1987). She states that a conjunction

- has to be syntactically detached from a sentence;
- has to be commonly used in an initial position of an utterance;

- has to have a range of prosodic contours;
- has to be able to operate at both local and global levels of discourse;
- has to be able to operate on different planes of discourse.

Table 4 Conjunctions' properties as suggested by Schourup (1999) and Schiffrin (1987)

Schiffrin, (1987)	Syntactically detached from a sentence
	Commonly used in initial position of an utterance
	Able to operate at both local and global levels of discourse.
	Able to operate on different planes of discourse
Schourup, (1999)	Connectivity
	Optionality
	Non-truth-conditionality

It is clear that some of the above criteria suggested by Schiffrin (1987) concern the oral use of conjunctions. The criterion which related to the detachment of conjunctions from the sentence they exist in does not mean that these items are empty of meaning. On the contrary, Schiffrin (1987, p. 314)) emphasises that "except for *oh* and *well*... all the markers... have meaning."

It is observed, however, that with the inclusion of only eleven conjunctive expressions in her study, it is difficult to understand how she could generalize her criteria to all conjunctions.

Fraser (1999, p.934) comments that,

> By examining only 11 expressions, she realized that her focus is somewhat narrow and suggests a number of other cases which bear consideration as [conjunctions];...deictics, such as *here* and *there* ... and quantifier phrases such as *anyway, anyhow*, and *whatever*." [my italics]

By so doing, she tries to identify the actual contribution of conjunctions to the coherence of the text. To achieve this, she divides discourse into five independent

planes, every plane has its own coherence. Ideational structure is one of the planes which are related to written text. Schiffrin (1987, p. 24-25) states that this plane "reflects certain relationships between the ideas (propositions) found within the discourse, including cohesive relations, topic relations and functional relations." However, in her study, Schiffrin includes only the relations created between adjacent sentences in written text, and between adjacent units in oral discourse. Thus, the example given by Fraser (1999, p.938):

(16) He drove the truck through the parking lot and into the street. Then he almost cut me off. After that he ran a red light. *However*, these weren't his worst offences,

is not covered by her investigation since *however* relates all the preceding sentences not only the immediately preceding one.

Redeker (1991; cited in Fraser, 1999), also criticises Schiffrin (1987) for her inclusion of only eleven conjunctions: *and, because, but, I mean, now, oh, or, so, then, well*, and *y 'know*, stating that these conjunctions are repeated in the five planes she proposed. Redeker argued that the independent discourse planes she suggested are not well defined. For example, Information Structure and Participation Framework should be integrated into the other three planes: Exchange Structure, Action Structure and Ideational Structure since they are not clearly distinguishable. To rectify the limitations of Schiffrin, Redeker (1991) suggests a three planes model of discourse coherence. This model consists of three components: Ideational Structure, Rhetorical Structure, and Sequential Structure.

To distinguish conjunctions from other lexical items, Fraser (1999) suggests that:

1. Only items which join independent sentences can be accepted as conjunctions.

2. Items connecting two independent sentences but not separated by a full stop are also conjunctions, as far as the segments they join have an independent proposition, as the following example explains:

(17) Azeez played chess, *and* his sister read a story.

However, if *and* joins, for instance,

(18) Nour *and* his sister played chess,

and is not a conjunction with Halliday and Hasan's use of the term. This is because *and* functions as a coordinator within the same single message as mentioned above.

3. Conjunctive expressions such as *because of this*, *as a result of (that)*, *in comparison (to/with this/ that)*, *on this/ that condition* are all conjunctions as far as they are separated from their hosted sentence by a comma:

(19) Prices are getting higher everyday. *As a result of that*, big families have to control their expenditure.

This is to distinguish the conjunctive items from prepositional phrases such as (20) where the prepositional phrase is a part of the first noun phrase:

(20) As a result of high prices, big families have to control their expenditure.

4. Subordinators like *because, since, while*, and *unless* are considered conjunctions though they do not connecting sentences separated from each other by a full stop, since they join two clauses, one of which is dependent on the other for its interpretation. It seems that linguists have an implicit consensus about this topic since no serious arguments have been heard against this issue so far.

5. Conjunctions should not be forced haphazardly between sentences with the expectation that the relation the conjunction signals should make the utterance / text coherent. On the contrary, " the interpretation of the discourse segments S2 and S1 ...

must be compatible with the particular conjunction used in order that a sequence be considered coherent" (Fraser 1999, p. 941). Thus, an example such as,

(21) The tide is high. *Furthermore*, I love detective stories,

is not semantically acceptable. This is because *furthermore* is a procedural not a conceptual expression.

With the properties Fraser suggests for conjunctions, many expressions which may be considered by other linguists as conjunctions are excluded by him. Such expressions could be exemplified by a) commentary pragmatic markers like *frankly, obviously,* and *stupidly,* b) focus particles such as *even, only*, and *just,* c) pause markers such as *hum, well,* and d) interjections such as *who*, and *shucks.*

3.6. Function of conjunctions

Regardless of the labels given to conjunctions by linguists, e.g., connectives, cue phrases or discourse markers, (this thesis uses the term conjunction/conjunctive), all of these items share one major similar function. It is to make a certain semantic relationship between two independent sentences explicit. However, these sentences are not necessarily adjacent since conjunctions can also join text constituents globally. As far as these items connect two or more independent sentences, they can be recognised as conjunctions.

Discourse connectives are the label given to conjunctions by Blakemore (1992). As a relevance theorist, she focuses in her study on the way conjunctions operate within utterance/ text, and the constraints they impose on the text/ utterance interpretation. Blakemore (1992) states that, conjunctions differ from normal lexical expressions such as *flower* or *beauty* in that they lack a concrete or an abstract meaning. She claims that their function is limited to instruct readers about how to

manage the conceptual representation of text components. Taking this function into consideration, conjunctions for Blakemore have a procedural meaning not a conceptual one, since they are detached from the utterance or the sentence either by a pause or by a colon as mentioned above.

Focusing on the semantic relations conjunctions signal in text to achieve coherence, many linguists (e.g., Knott and Dale 1993, Sanders and Noordman 2000) investigate the nature of the relations conjunctions suggest for the sentences they link. Labelled conjunctions as cue phrases, they emphasise that discourse relations could be made explicit by the use of conjunctions.

Sanders and Noordman (2000) focus on the investigation of coherence and the means that contribute to it in their study. Their findings suggest that conjunctions have a vital role in the coherence of text. However, they observe that text could be coherent without the explicit presence of conjunctions. Fluent readers are able to use other textual features to extract the message from the text.

In summary, conjunctions as a homogeneous group can "link spans of discourse together" Knott and Dale (1993, p.15). However, it is assumed that if a conjunction existing between linked sentences is deleted, the propositional meaning of both sentences should not be interpreted differently. It is suggested that without the assistance of conjunctions, the reading process could be slower and the inference could be more difficult than with the presence of conjunctions. In many cases, the interpretation of the conjoined sentences is seriously affected if the conjunction is deleted. Sentences conjoined by *since, while, whereas*, and *because* could be difficult to interpret if the conjunction is omitted for grammatical reasons related to the relationship between the dependent and independent clauses.

3.7. Recognition of conjunctions

To distinguish a conjunctive from other lexical items, Knott and Dale (1993) suggest a practical procedure which can be conducted in analysing any written text and recognising conjunctions together with the relations they signal in text. By detaching the conjunctive item from its hosting clause / sentence it becomes clear whether the clause/sentence has a complete meaning or not. If the meaning is incomplete, it means that the clause/sentence is a part of the semantic relation which is made explicit by the conjunction hosted by the sentence under investigation. To ensure the accuracy of this procedure, all pronouns in the isolated clause/ sentence should be replaced by their actual referents. The isolated clause/ sentence should have a complete meaning regardless of the conjunction's presence. By this simple test, conjunctions can be easily identified and their semantic relations are understood. This is because of the considerable contribution conjunctions have to text coherence.

Despite the simplicity of this procedure, some limitations could not be avoided. In many cases it is difficult to retrieve the referent which replaces the pronoun mentioned in the isolated clause/sentence, since the referent could exist out the text (exophoric), or the referent refers to another complete clause. Moreover, many clauses can be considered complete statements though of their hosting to a conjunction. For example,

(22) *But* you can not just leave us here,

is a reaction to a preceding contextual type of discourse rather than connected to an adjacent textual sentence.

Applying what they term as the 'substitution theory', Knott and Mellish (1996) manage to assemble a large number of conjunctions with the intention of classifying them into a taxonomy of synonyms and antonyms. By so doing, they tried

to be consistent when describing the properties of every conjunction, even though, as they stated, such a task is not so easy.

Knott and Mellish (1996, p.144) recognise that gathering all conjunctions in one study is almost impossible "as yet there are no studies within the formal tradition which aim to account for all of these at once." Some of the reasons behind the failure to achieve this aim so far are:

1. The number of conjunctions is very large and diverse.

2. "Many connectives are hard to classify, or seem to be classified in more than one category" (Knott and Mellish 1996, p.144).

Most of the proposed classifications in the literature of conjunctions have the same limitations when applied in the analysis of language discourse. This problem is highlighted by Kônig (1986; cited in Knott and Mellish, 1996). Kônig (1986, p.229) states that,

> Terms like conditional, temporal, causal, concessive are part of the terminological inventory that traditional grammar makes available for the characterisation of adverbial clauses. The distinctions drawn by these terms seem clear enough until an attempt is made...to apply them in an exhaustive characterisation of all kinds of data within a single language.

The presence of many impediments on the way of assembling, classifying, and studying conjunctions does not mean that such systematic and comprehensive studies have not been found yet. Halliday and Hasan's cohesion theory and Martin's taxonomy of conjunctions are some of the studies which many other linguists adopted as a guide for their conjunction studies.

Knott and Mellish (1996) adopt what they call an 'incremental methodology' in their study of conjunctions: firstly, by gathering a large number of conjunctive expressions; secondly, organizing them into two groups of synonyms and antonyms by using the substitution test mentioned above; and finally, suggesting a theoretical

interpretation of the conjunctive expressions. The most important stage of this methodology is the last one since it includes description of the nature and functions of conjunctions when realised in text. The other two steps are mere traditional data collection methods.

3.8. Core meaning of conjunctions

Shrourup (1999) investigates whether conjunctives have meaning or they are empty items. He argues that meaninglessness does not mean that conjunctions are "'wild cards' which lack specific content" (ibid. p. 242). Rather, according to him every conjunction has meaning and the question is what kind of meaning they convey. Every conjunction has a core meaning which is the semantic content it has. "Even when a particular [conjunction] is claimed to be semantically empty, it is usually nevertheless held to have an invariant core of some kind" (Schourup 1999, p. 249).

Conjunctions actually specify "the way in which what is to follow is systematically connected to what has gone before" (Halliday and Hasan 1976, p.227). This means that they are important semantic resources that can be used by writers to create cohesive text.

Considering conjunctions as lexical expressions with procedural not conceptual meaning, Fraser (1998, p.302) argues that every conjunction provides "information on how to interpret the message conveyed by S2 vis-à-vis the interpretation of S1."

He states that identifying conjunctions as procedural and not conceptual items does not mean that they are empty. On the contrary, "every conjunction has a specific core meaning. For example, the conjunction *so* signals that the following segment is

to be interpreted as a conclusion which follows from the prior discourse" (Fraser 1999, p. 945). Consider the examples:

(23) Suzan is married. So, she is no longer available I guess.

(24) John was tired. So, he left early.

As a compromise, Schiffrin (1987, p.127) states that conjunctions are "somewhat delimited by their semantic and grammatical status." Whether a conjunction has a single core meaning or multiple meanings, there is no consensus on one recognised meaning for every conjunction since "there is no criteria other than plausibility for determining whether the meaning descriptions proposed in the various studies of [conjunctions] are really valid" (Fischer 1998, p.111). To solve this problem, she suggests a semantic test to evaluate the acceptability of conjunctions through a natural social language context.

3.9. Summary

Conjunctions as independent grammatical category were defined and their grammatical features as suggested by many linguists were reviewed. Classifying conjunctions according to their semantic function was explored. This was followed by presenting the properties which most of the recognised conjunctions share, such as connectivity, optionality and non-truth-conditionality. The contribution of conjunctions to the explicitness of the semantic relations existing in text was highlighted through the presentation of their function. Finally, the methodology which can be used to distinguish conjunctions from other language items was discussed. In the next chapter, the facilitating role of conjunctions to foreign language reading comprehension and the various points of view regarding this topic will be reviewed.

Chapter Four

Conjunctions and reading comprehension

In the previous Chapter the nature of conjunctions was defined. The literature relating to their classifications was reviewed. Several criteria used by linguists to distinguish conjunctions from other linguistic items were presented and discussed.

In this chapter, the literature relating to the impact of conjunctions on reading comprehension will be reviewed. Various contradictory research findings for investigating of this topic will be the focus. Possible reasons behind these diverse findings will be discussed.

4.1. Introduction

With the assumption that conjunctions contribute to the cohesion and coherence of written text, linguists, psycholinguists, and classroom language teachers have dedicated considerable time and effort to investigating the effect of conjunctions on the process of reading, on recall and on the reading comprehension of native and foreign language students. The objectives of these studies have been to explore whether conjunctions could be used to facilitate reading comprehension. Suggesting pedagogical means for achieving independent, satisfactory understanding of written text are the ultimate goal of these studies.

Investigating the impact of conjunctives on the reading process, recall and the final product of reading (i.e. comprehension) revealed many contradictory findings. Some of these findings have confirmed the facilitating role of all conjunctive types,

i.e. additive, adversative, causal and temporal, to reading comprehension. Other studies came out with the conclusion that some conjunctions are more facilitative to reading comprehension than others. A few research findings, however, have doubted this positive impact, claiming that a text is coherent with or without the explicit presence of conjunctions. "Thus, so far there is no consensus on the exact role of explicit [conjunctions] in text" (Degand and Sanders 2002, p.470).

In general, the findings related to this topic can be classified into the following categories:

1. All conjunctive types facilitate reading comprehension.
2. Some of the conjunctive types are more facilitative of reading comprehension than others.
3. Conjunctions have no impact on reading comprehension.
4. Conjunctions have a negative effect on text comprehension.

In this review, we will discuss these categories one by one, highlighting the major studies investigating each category. Even though the reading process is not the main focus here, some of the important papers investigating this topic will be reviewed since process is an important primary stage to comprehension. It is useful to understand the phases of the reading process in order to understand how comprehension is achieved.

4. 2. The finding that conjunctions facilitate reading comprehension

Since the identification of conjunctions as an independent linguistic category with an important function in the semantics of language, linguists and psycholinguists have been studying the effect of these items on reading and writing skills. Their aim

has been to suggest pedagogical theories which could help students in learning effective reading strategies based on conjunctions.

These studies investigate either conjunctions directly in languages such as English, French, and German or focus on studying the semantic relations which are made explicit by the presence of conjunctions in written text. For instance, whenever cohesion and coherence are investigated, conjunctions are among the main cohesive devices that attract the attention of researchers (e.g., Halliday and Hasan 1976; Chapman 1983; Williams 1983; Knott and Dale 1993; Knott and Mellish 1996). Examples of studies which found that conjunctives, with no clear reference to their types, facilitate reading comprehension are critically reviewed in this section.

4.2.1. Chapman (1983)

Recognising cohesion as one of the major standards of textuality as De Beaugrande and Dressler (1981) suggest, Chapman (1983, p.1) investigates cohesion, which he acknowledges as the " major text quality such that ...the more cohesive a text and the more the reader is aware of this, the more comprehending is assisted." In investigating cohesion, conjunctions are recognised one of the main cohesive ties which relate components of text together and help readers construct coherent messages easily and quickly.

Chapman (1983) examines the impact of reference and conjunctions on the reading skill of English native students. He emphasises that reference and conjunctions "supply an inventory of...linguistic mechanisms that create cohesion [or unity] in texts. ...it is such an important language feature in relation to reading ..." (ibid. p. 44).

Chapman (1983) states that conjunctions have many functions. Firstly, they connect and integrate the meaning of the propositions linked together by a conjunction to form a single unified interpretation. "Conjunctions confirm that what has just been read is to be connected with the following sentence and that it is the meaning that is to be integrated" (ibid. p. 87). Secondly, conjunctions impose certain semantic relations on the connected text constituents, such as additive, adversative, causal and temporal or sequential relation.

Based on his research findings, Chapman (1983) recommends that students in school need to be taught how to identify conjunctions, learn their meanings, and be trained to recognize the semantic relations conjunctions signal in written text. Young children are in a better position to learn these skills. He suggests a gap technique as one of the effective classroom activities to teach conjunctions.

The enthusiasm of Chapman to the cohesion theory made him generalize his finding to L1 and L2 language learners of all ages. This generalization lacks precision because many other research findings which preceded and came after his studies have emphasized the impact of the mentioned factors on reading comprehension in different ways, as we will see later.

4.2.2. Chaudron & Richards (1986)

Dividing conjunctions into micro and macro markers, Chaudron and Richards (1986) investigate their impact on the comprehension of lectures. Conjunctive items such as *because, then, but*, and *and* were classified under micro-markers, and expressions such as *let us go back to the beginning* under macro-markers.

Students learning English as a second language were exposed to four lecture versions. One with macro-markers, the second with micro-markers, the third with both, and the last version was free of both. Their research findings revealed that:

1. The lecture which was supplemented by micro and macro conjunctions was better understood by the participants than the versions which lacked these items.

2. Macro conjunctions were more effective than micro items.

If it is acknowledged that listening and reading skills are closely related, it can be said that the findings of this study support the presence of conjunctions in written texts. Listeners like readers can benefit from the presence of conjunctions in written text for constructing coherent meaningful messages. However, reading and listening skills differ in many features. Unlike listeners readers have many skills and strategies that they can flexibly use. For instance, a reader can always go back and check the meaning and the function of any vocabulary item if s/he is in doubt. On the other hand, a listener has no chance to stop the lecturer and clarify any vague meaning unless s/he listens to a tape recorder. This might be the reason behind Chaudron and Richards' (1986) participants not benefiting much from the micro conjunctions.

The study participants' failure to benefit from micro conjunctions could also be attributed to the materials used in the experiment. The materials used might not be sensitive enough to the semantic relations present in the text. In addition, in many cases conjunctions are forced into texts in a way that these texts are clearly recognized as artificial. Experiments which use artificial texts could lead to imprecise results.

Chaudron and Richards' (1986) explanation of the reasons behind the little effect of micro conjunctions on the comprehension of lecture could be disputed. For example, to claim that micro conjunctions "do not add enough content to make the subsequent information more salient or meaningful" (ibid. p. 123) could be disputed.

It is well known that many conjunctions have content meaning and have the power to impose conceptual meaning on the clauses and sentences they connect. Nobody questions the conceptual meaning of the conjunction *because,* for instance. Even procedural conjunctions constrain the inference of the reader and direct him/ her to certain semantic relations.

The low performance of the participants of this study of the micro-level could also be attributed to their failure to identify conjunctions and the semantic relations they signal in text. Another cause could be related to the native languages of the participants (mainly East Asians).Their languages are entirely different from English which they spent only a single summer term of intensive learning, as the researchers reported.

All in all, what concerns us is the finding that the participants found the lecture versions supplied by conjunctions easier to understand than those without them. Chaudron and Richards (1983, p.124) recognise that the findings of this study are,

> Of ultimate importance not only for the language teacher who trains L2 learners in listening [and reading] skills, and the curriculum developer who devices a program or materials that achieve that training, but also for teachers and lecturers who teach content subjects to non-native learners.

4.2.3. Geva (1992)

Taking for granted that writers use conjunctions and other textual features to construct a coherent understandable text to assist readers in recognising and interpreting semantic relations correctly, Geva (1992) tried to answer the question of whether L2 readers with different levels of language proficiency could benefit from these items in their reading comprehension. Geva assumed that adult second language

readers are more qualified to recognise and use conjunctions than less proficient readers.

Foreign students learning English as a second language in Canadian universities were the participants of Geva's study. Her participants were classified into three language proficiency levels according to an English oral proficiency test administered by their teachers. Three tasks were organised: the first task examined the comprehension of conjunctions intra-sententially. Three conjunctions *because*, *although*, and *if* were selected as samples of the conjunctives.

The second task investigated understanding the use of conjunctions inter-sententially. *But* and *although* appeared in the first and middle position of the sentences. The third task was concerned with understanding the global meaning of discourse which included semantic relations signalled by conjunctions. Selected conjunctions were omitted from an expository text and the participants were instructed to choose the correct conjunction among four options given.

And finally, another three versions of expository Academic Prose texts were given to the participants in order to assess their overall comprehension of academic discourse. The reason for choosing expository texts as materials in this study was to minimize the influence of the background knowledge of the readers about the topic and force them to use the textual features in their reading for comprehension.

The findings of the study showed that "the three proficiency groups differ in comprehension of logical relationships at all discourse levels" (Geva 1992, p.739). High proficiency L2 group performed better than the low language group in all tasks. This finding applied to the global comprehension of the expository text. "L2 learners who are more proficient in the L2, in terms of their lexicon and various aspects of

syntactic knowledge are better able to process and integrate information at more global levels in reading tasks" (Geva 1992, p. 743).

Geva (1992, p.741) concluded, "... as the learners become more proficient in their oral language, their performance on intra-sentential, inter-sentential, and discourse level tasks gradually improve". This finding revealed the positive effect of conjunctions in both local and global text comprehension; however, foreign language readers need to improve their language proficiency to be able to benefit from these conjunctive items.

These findings are different from Geva (1986) which stated that the presence or absence of conjunctions has no effect on the reading comprehension of L2 readers. However, if conjunctions are highlighted they could have an adverse impact on the reading comprehension of intermediate level students and "...a facilitating effect on the advanced level students" (Geva 1986, p.94). She concluded that highlighting certain words such as conjunctions in the text could have a distractive effect on poor L2 readers but could help advanced L2 readers because highlighting conjunctions may alert them to their role in cohesion and coherence of the text.

4.2.4. Sanders & Noordman (2000)

This study explores the impact of conjunctions on reading comprehension by investigating the coherence that joined the ideas presented in a written text. Sanders and Noordman (2000) approached this study with the assumption that conjunctions contribute to the explicitness of the coherence relations which distinguish text from non-text. They stated that "linguistic marking facilitates the interpretation of the coherence relation intended by the writer, because the [conjunction] makes coherence relation between the text segments explicit" (Sanders and Noordman 2000, p.45).

Coherence relations such as cause-consequence, list, and problem-solution are made explicit by using conjunctions such as *because, in addition, and, so,* and many others.

For testing comprehension, expository texts were used to decrease the influence of the background knowledge of the topic and to leave the reader with no choice but to use the linguistic information available in the text effectively. Two texts were chosen as the materials of the study. One text was modified to include only a causal relation and another text included an additive relation.

The intention behind choosing these two different semantic relations was the researchers' belief that the causal relation is strongly organized whereas the additive relation is considered by many linguists a weak relation. The causal relation was signalled by the conjunctions *because* and *therefore* and the additive relation was represented by *and, also*, and *furthermore*. Another two texts included the same relations; however, they were not explicitly signalled by conjunctions. In other words, the participants of the study were asked to recognize these relations despite the absence of causal and additive conjunctions from the text.

The findings of this study revealed that the texts with explicit conjunctions were recalled better than the texts with implicit coherence relations. This meant that conjunctions "facilitate the encoding of the coherence relation between two text segments" (Sanders and Noordman 2000, p. 54).

Sanders and Noordman (2000, p. 54) also found out that "in the unmarked [texts] the coherence relation is established as well, but there it requires more time to establish the relation because it has to be derived on the basis of the content of the clauses without being facilitated by the [conjunction]".

Only two conjunctive items from the causals and the additives were used in this study, which is insufficient to represent these conjunctive types. Furthermore,

other coherence relations such as adversative and temporal, were not included in Sanders and Noordman's (2000) study. Nevertheless, the findings of the study suggested that conjunctions tested were found to enhance better recall which presupposes comprehension.

4.2.5. Chung (2000)

Chung's (2000) study investigated the relationship between conjunctions (paragraph signals and logical connectives), coherence and reading comprehension in the local (micro-structure) and global level (macro-structure). This includes exploring the relationship between two different FL proficiency groups and the degree of benefit they can get from conjunctions in reading comprehension.

High and low language proficiency groups were given four texts for testing their reading comprehension by answering multiple-choice questions related to the texts. Three texts included conjunctions and the fourth was modified to have semantic relations which were not signalled explicitly by conjunctions. However, the conjunctions used in the conjunctive versions are not "restricted to the categories of conjunctions proposed by Halliday and Hasan (1976)" (Chung 2000, p.2).

Thus, the study was designed to measure comprehension on three levels: micro-level, macro-level, and reading comprehension in general. Hong Kong secondary school students learning English as a foreign language were the participants of the study. The participants were divided into two language proficiency groups after they had attended a replacement test.

As expected, the participants answered the questions of the text version which included conjunctions and paragraph headings much better than other versions. It appeared that their combination gave clear signals to the participants to use both top-down and bottom-up strategies more effectively. Text versions which included

conjunctions and paragraph headings individually were less comprehensible than the text version with both signals, though better than the non-signal version.

On the micro and macro levels and in agreement with Chaudron and Richard's (1986) findings mentioned above, (logical connectives) did not add much to micro structure comprehension, but they facilitated understanding at the macro-structure level. This result could be attributed to the type of conjunctions used in the modified texts. Another reason could be related to the experimental method or the testing instruments which might not be sensitive enough to test comprehension on this level.

4.2.6. Degand & Sanders (2002)

Degand and Sanders (2002, p.739) reported that their review of the literature relating to the effect of conjunctions on reading comprehension revealed that "there is no consensus on the exact effect of explicit [conjunctions] on text understanding." For this reason, they decided to investigate the impact of causal conjunctions on the reading comprehension of L1 and L2 readers. In order to have valid findings, they took certain precautions, such as limiting the study to the investigation of only causal conjunctives, replicating the study in France and Germany, and using expository texts for testing comprehension.

The participants of the study were asked to answer comprehension questions on expository texts with and without conjunctions. Degand and Sanders (2002, p.751) concluded that their finding "clearly suggests that linguistic markers help readers construct a coherent cognitive representation of the information in the text."

This finding also suggested that both low and high English language proficiency groups benefit similarly from the explicit presence of causal conjunctions. This may contradict many other studies (e.g., Goldman and Murray 1992) which

claim that low second language proficiency group benefit less from conjunctions than high language level group. As Goldman and Murray (1992) state, low language proficiency group can only benefit from conjunctions if they manage to recognise these items and understand the semantic relations they signal. Cooper (1984) also argues that the lack of knowledge of conjunctions leads non-practised L2 readers (i.e. low proficient readers) to poor reading performance. These studies will be reviewed in more details later.

4. 3. The finding that conjunctive types affect reading comprehension differently

Conjunctions are divided by Halliday and Hasan (1976) according to the semantic relations they signal into four types; additive conjunctions, adversative, causal, and temporal conjunctions. This classification is neither exhaustive nor precise, as discussed in Chapter Three. For instance, many conjunctions are classified under more than a single type and many others have been added to this category by receiving full recognition from many prestigious linguists. A close look at this long open list of conjunctions reveals that not all of these linguistic items have similar characteristics. Because of the various definitions and classifications suggested for these items, their impact on reading comprehension also varies. Several linguists and psycholinguists have found that certain conjunctive types are more facilitative of reading comprehension than others. The following studies are examples of many research investigations whose findings help to clarify this controversial topic.

4.3.1. Stoodt (1972)

One of the earliest studies investigating the role of conjunctions in reading comprehension was reported by Stoodt (1972). He examined the relationship between understanding grammatical conjunctions and reading comprehension. His reading comprehension test included conjunctions such as *and, as, because, but, either, since, so, for, if, while,* and *yet.* The second purpose of his study was to "explore the difference in the difficulty of various conjunctions" (ibid. p. 502).

The findings of Stoodt's (1972) study revealed a significant relationship between reading comprehension and understanding of conjunctions. In addition, he found that some conjunctions are significantly more difficult and a few others were significantly easier. Conjunctions such as *so, but, or, while* were found to be difficult, whereas conjunctions such as *and, how* and *for* were found easy for readers to use in reading comprehension.

Even though the findings of this study suggest that there is a relationship between reading comprehension and the comprehension of conjunctions, it appeared that the sample of conjunctions Stoodt (1972) used was not representative of the large number in this grammatical category. Furthermore, there was no clear distinction between the conjunctive types. This makes it difficult to decide which conjunctive type is more facilitative of reading comprehension. For example, he found *or* a difficult conjunction and *and* an easy conjunction though both of them are sisters of the additive family according to Halliday and Hasan's (1976) classification.

4.3.2. Cooper (1984)

Like Chapman (1983), Cooper (1984) explored some of the textual linguistic features which may help what he called un-practised readers in their reading

comprehension. He emphasised that language items which contribute to grammatical and lexical cohesion and inter-sentential relationships are important linguistic categories that positively affect reading comprehension. According to him, understanding cohesive devices such as reference, ellipsis, substitution and conjunctions are vital for ESL readers. His research findings, which involved what he called practised (skilful) and un-practised students as participants, revealed that practiced readers were better than un-practised readers in identifying the cohesive relations which are signalled by cohesive devices such as conjunctions.

Cooper (1984) concluded that unskilled readers did not benefit from the explicit presence of conjunctions because they are uncertain of their meanings, especially the adversative type. However, it seems that "the only relationship that they seemed fairly sure of was addition, typically signalled by *moreover, furthermore*...etc." (Cooper 1984, p. 132). Skilled readers were in a better position to benefit from the explicit presence of conjunctions in written texts since they managed to recognize semantic relationships beyond the sentence level.

Cooper (1984) stressed the importance of recognizing the meaning of conjunctions and the function they have because they,

> Not only signal the relationship of what is to come in the text with what went before ..., but they are often used to show what the writer is going to do or what he has done (e.g. to describe the *function* of something, to make a *contrast*). If readers do not understand the jobs that such words perform in relating and organizing meanings above the sentence level, their reading is indeed severely handicapped.
>
> (Cooper, 1984, p. 133)

4.3.2. Caron, Micko & Thûring (1988)

Caron et al. (1988) investigated the coherence relations established between clauses and sentences and the conjunctions which signal and constrain these relations.

In other words, "the present investigation is concerned with conjunctions, the most likely candidates to influence the construction of coherence relations" (Caron et al. 1988, p.310). This study is another contribution to the clarification of the contradictory findings related to the impact of conjunctions on reading comprehension. It examined the actual impact of conjunctions on sentence processing including whether different conjunctions lead to different representation, and whether this affects the recall of the sentences joined by conjunctions.

The impact of *because* and *and* on the joined sentences recall was tested in two experiments organised in Germany, and a third organized in France with the intention of refining the findings of the German experiments and testing the adversative conjunction *but*.

Pairs of sentences with no explicit semantic relations were chosen as the material of the experiments. Any clues leading to coherence such as reference, substitution, or lexical cohesion were avoided since they might facilitate inference.

Caron et al. (1988) selected *because, and, but* to be the representatives of causal, additive and adversative conjunctive types in this study. This choice was based on their assumption that causally related events are easy to remember, *and* suggests many semantic relations, *but* represents adversatives and *because* represents causals. Temporal relations were not represented by any conjunction in this study. The researchers gave no explanation for this exclusion, which may affect the generalisation of their findings to all conjunctions.

The first experiment was designed to answer the question "whether or not a pair of simple sentences is recalled better if connected by the conjunction *because* than if connected by *and* or presented without any connection"(Caron et al. 1988, p.311). The other objective was to measure the time needed to recall every case. The

participants of the study were asked to read and encode apparently unrelated German sentences and write down all they could remember of the second sentence.

As expected, *because* sentences were found to be better recalled than the *and* sentences and the unconnected condition. Unconnected sentences recorded the lowest percentage of the recall scores. It is worth reminding the reader that recall is different from comprehension even though the former presupposes the latter. For this reason, this study is included here.

In order to confirm the findings of the first experiment, another experiment was organized. More information about the accessibility of the encoded sentences in memory could also be provided by this investigation. Different participants were recruited to read and recall the same materials used in the first experiment.

Again, *because* sentences were remembered much better than *and* sentences and the unconnected ones. However, this time the unconnected clauses were recalled better than the *and* sentences. It is clear that the latter finding contradicts the assumption that connected sentences were better recalled than the unconnected cases. External factors could be involved and might have influenced the participants' result.

The last experiment was a replication of the first one. The focus of the experiment this time was aimed at investigating the impact of the adversative conjunction *but* on recall. Larger number of participants speaking French as an L1 were instructed to read the same materials used in the first experiment and write down whatever they remembered from the given connected and unconnected sentences.

Unsurprisingly, *because* sentences maintained their superiority over the other connected and unconnected cases. However, as in experiment two, the unconnected sentences were recalled better than the *and* connected sentences. Unexpectedly, *but* and *and* sentences were recalled almost the same. This finding was surprising since it

is assumed that *but* has the ability to activate more elaboration and promote more guessing than *and.*

The findings of this study are somehow not homogeneous. These incoherent findings could be attributed to the difference in the translation of the materials from German to French, which differ in many syntactic features. For instance, as Caron et al. (1988) recognized "some differences [in translation] could not … be avoided: the German past tense was translated by French imperfect, and the five model verbs ("können", "dürfen", "sallen", müssen", and "wollen") had only three French counterparts ("pouvoir", devoir", and "vouloir")" (Caron et al. 1988, p.318).

In addition, the materials used in the experiments which, intentionally, included unrelated sentences made the recall task difficult. This meant imposing any semantic relationship on unrelated clauses/sentences requires much inference and elaboration which consequently consumes more time and faces the risk of failure in producing the correct interpretation. Only coherent events are encoded and remembered quickly and easily.

4.3.3. Goldman and Murray (1992)

Adopting the classification of conjunctions proposed by Halliday and Hasan (1976), Goldman and Murray (1992) focused in their study on the investigation of the impact of all conjunctive types on L1 and L2 readers. To minimize the influence of background knowledge of the text topic, the researchers chose expository texts as the materials of their study. This is based on the assumption that,

> The less the reader knows in the domain [of the text], the more important is knowledge of how general linguistic devices may be used to ascertain the local and global structure of the text.
>
> (Goldman and Murray 1992, p. 504)

As mentioned above, so far linguists and psycholinguists have no consensus on the actual benefit L2 readers can get from the explicit presence of conjunctions in written texts. Several studies suggested that low proficiency L2 readers have little benefit from conjunctions because they are not able to recognize the semantic relations which are made explicit by conjunctions. This study is an attempt to clarify this controversial topic.

In this study several conjunctions were selected as representatives of all conjunctive types (i.e. additives, causals, adversatives, and sequential conjunctions). From the additives, *for example, for instance, in addition, in particular, in fact* and *indeed* were chosen. The causals were represented by *thus, so, consequently, as a result, as a consequences*, and *therefore*. The adversatives were *but, however*, and *nevertheless*. And finally the sequential conjunctions were represented by *briefly, first, finally, in short, second* and *third*.

They justified their choices of the mentioned conjunctions by stating that they chose these samples,

> To ensure that frequency of use and familiarity of the different instances would not confound contrast among the connector types. We included instances for which frequency per million according to the data provided by the Carroll, Davis and Richard 1971 corpus was greater than 10.
>
> (Goldman and Murray 1992, p. 507)

However, it seems that this criterion could not be applied to the adversatives since only three members of this type were selected. Goldman and Murray (1992, p.507) recognized that "the comparatively smaller set of adversative instances reflects the difficulty of finding instances of that [conjunctive] type of sufficient frequency".

Four expository texts were chosen and modified to accommodate the conjunctions selected for the study. The research participants were university students, almost half of whom were native English speakers and the others were ESL speakers. Their tasks were to choose the correct conjunction among four options given to complete a multiple choice, rational clause test and complete a background questionnaire.

The finding of the first experiment indicated that native speakers had better performance in the rational cloze test, which meant that they managed to identify the meaning of the given conjunctions and correctly match them with the semantic relations existing in the text. However, both L1 and L2 groups had the same performance in relation to conjunctive types. Additives and causals were more correctly chosen than adversatives and sequential conjunctions.

These findings suggested that ESL readers had little benefit from the linguistic devices (i.e. conjunctions) presented in the text compared to the native speakers. This might mean that they failed, to a certain degree, to identify the meanings of the given conjunctions and to recognize the semantic relations in the texts. Besides, as Goldman and Murray (1992, p.512) said "it seems that poorer performance on the cloze slots is indicative of failure to comprehend the text adequately."

The second experiment investigated the degree of confidence in selecting the correct type of conjunctions by ESL readers. This time the language level of ESL participants was lower than the language level of ESL participants of the first experiment. Because of the lower language level of the participants of this experiment, different materials were constructed.

As in the first experiment, the participants were more successful in choosing the additives and the causals than in choosing the adversatives and the sequential

conjunctions. However, contrary to the researchers' expectations, confidence rating data revealed no significant difference among conjunctive types. As Goldman and Murray (1992, p.517) stated, it seems that "ESL students were no more confident of their adversative or sequential choices than they were of their additive and causal choices".

To conclude, it can be said that all the experimental findings of this study support the assumption that native English speakers performed better than ESL students in the rational cloze test. In addition, both groups found the additive and the causal conjunctions easier than the adversative and the sequential conjunctions. This finding is consistent with Caron et al. (1988) which found that *but* is more difficult to recall than *and* and *because*. Goldman and Murray (1992, p. 517) concluded the "logical relations that indicated contradiction or contrast between successive sentences in text (i.e., adversative) tended to be more difficult for students to identify."

4.3.4. Millis and Just (1994)

This study explores how the sentences which are joined by the causal conjunction *because* and the adversative conjunction *although* are integrated during the reading process to achieve comprehension. Because of the importance of this primary stage of reading process to comprehension, this study is included in this literature review.

Using English native speakers as participants in their study, Millis and Just designed four experiments. The first experiment examines the impact of the conjunction *because* on the activation level of the clause that it follows. Its finding indicated that the presence of the causal conjunction helps in speeding the

interpretation of the second clause. The reader is assisted by the explicit signal which obligates him/her to integrate the connected clauses causally. This, consequently, affects the final comprehension.

The second experiment "examines the course of the connective's reactivation effect" (Millis and Just 1994, p.135). In other words, the aim of this experiment is to determine when the integration of the two connected clauses occurs. The findings showed that the presence of the conjunction *because* decreases the integration time of the connected clauses.

The third experiment investigates the effect of the conjunction *because* on the related and low/non-related clauses. The findings revealed that " the more related the second statement is to the first statement, the faster the second statement is read" (Millis and Just 1994, p.138). This meant that coherent clauses are integrated faster than the unrelated clauses. Millis and Just (1994) explain this by saying "when a causal connective links related statements, subjects are able to integrate the statement into a coherent representation, perhaps by generating elaboration from world knowledge "(ibid. p.140).

In the fourth experiment the conjunction *because* was replaced by the conjunction *although*. As in the preceding experiments, the findings of this experiment support the beneficiary effects of the conjunction *although* on reading comprehension. However, it has been observed that,

> *Although* sentences results in lower comprehension accuracy and slightly slower reading times than *because* sentences, there is some reason to suspect that these sentences were tougher to comprehend."
>
> (Millis and Just 1994, p.143)

Traxler, Bybee and Pickering (1997) do not agree with the findings of Millis and Just (1994) who suggested what they call the 'connective integrated model'. This

model is summarized as follows: "when the readers encounter a connective, they shut off processing of the preceding clause, reactivating it only when they reach the end of the second clause" (Traxler et al.1997, p.484).

Traxler et al. (1997) argue that Millis and Just (1994),

> ...might have failed to detect earlier evidence for disruption in the low related clauses because of the limitations self-paced reading combined with a secondary probe-recognition task. In addition, the probe-recognition task may not be sensitive to relevant aspects of early semantic processing.
>
> (Traxler et al. 1997, p.484)

As a replacement to the connective integrative model, Traxler et al. suggest a new technique which they labelled 'eye-movement monitoring'. This model proposes that when readers encounter two clauses joined by the causal conjunction *because,* they "incrementally construct a semantic interpretation of the second clause and assess it as a cause of the state of affairs described in the first clause long before they reached the end of the sentence" (Traxler et al. 1997, p.489).

All in all, whatever the actual process of clauses joined by conjunctions in the reader's brain are, the important thing is that conjunctions have a vital role in the reading process and their presence between clauses or sentences has a positive effect on the final representation of the reading activity. This happens by signalling the type of the semantic relation between clauses/sentences and by decreasing the time of integration between the joined clauses/sentences.

4.3.5. Murray (1997)

Recognizing that the presence of conjunctions between clauses facilitates their processing, speeds their integration, eases their recall and comprehension, Murray

based his study on the assumption that conjunctive types facilitate text comprehension in different ways.

Murray (1997) investigated how different conjunctive types facilitate reading comprehension differently. This study intended to "explore the psychological mechanism underlying the differential contribution made by additive, causal and adversative [conjunctions] to integrative processes" (Murray 1997, p.228). He suggested the term 'continuity hypothesis' which,

> ...predicts that additive and causal connectives should lead to less processing facilitation than adversative connectives because the former indicate continuity in the discourse whereas the adversatives indicate discontinuity.
>
> (Murray 1997, p. 229)

Native English university students were chosen to be the subjects of the first experiment. A number of unrelated sentences was selected for the materials of the experiment. These sentences were divided into four versions: each included a conjunction type, except one version which was free of conjunctions. Three types of conjunctives were used: additives which were represented by *moreover, furthermore*, and *and*; causals represented by *therefore, so, thus,* and *consequently*; and adversatives represented by *yet, nevertheless, however*, and *but*.

Murray (1997, p.230) justified the choice of these specific conjunctions by stating that "the particular connectives selected from each category represented a comparable range of frequency of usage in English".

The findings of this experiment supported the 'continuity hypothesis' stated above. It was found that conjunctions are "powerful indicators of continuity and discontinuity in text" (Murray 1997, p.231). The causal and the additive conjunctions signal continuity whereas the adversative conjunctions signal discontinuity.

In the second experiment, the participants read sentence pairs with semantic relations, which could be classified as additive, causal or adversative. Two thirds of these sentence pairs were supplied with conjunctions which are not in agreement with the semantic relation existing between the pairs. The remaining part was free of conjunctions. Reading time for the second sentence and the recall task was also measured.

As expected, the inappropriate conjunction versions consumed more time than the no-conjunction version in the recall task. All conjunctive types used,

> ...lead to reading difficulty on the sentence following the [conjunction] when that sentence conveyed a relation to the previous sentence that did not match that dictated by the [conjunction].
>
> (Murray 1997, p. 233)

The reading process of the participants is delayed by the false signal given to him/ her by the conjunction which contradicted their expectation. This disruption is greater with the adversative conjunctions than with the additive and the causal types, which meant that the time consumed in recalling the adversatives is longer than the time used by the causals and the additive types.

In the third experiment, the same materials as were administered in the preceding ones were used again. However, this time the participants were asked to decide to what extent the second sentence coheres with the sentence preceding the conjunction in the conjunction versions. With the presence of inappropriate conjunctions between two thirds of the given sentence pairs, it was expected that the signals would lead participants to different ratings of coherence.

The finding of this experiment revealed that "the presence of incorrect [conjunctions] led to lower ratings of passage coherence, but this effect was weaker with [conjunctions] that signal continuity (additives and causals) than with

adversatives" (ibid. p. 234). In contrast, the no conjunction version led to higher ratings of coherence than in the additive conjunction condition. Again, as predicted by the 'continuity hypothesis', the incorrect adversatives led to higher disruption compared to the other conjunctive types.

In conclusion, the findings of this study suggested that the conjunction type which causes higher disruption when located inappropriately between sentences would be the easiest for the reader if positioned correctly. This meant that the adversative conjunctions have "the greatest degree of processing facilitation when they were used appropriately" (ibid. p. 235). These findings are in line with Murray (1995), which stated that "...only the adversatives facilitate the integration in memory of the sentences surrounding the connectives" (Murray 1995, p.119). Based on this conclusion, it can be said that the adversatives are more facilitative to reading comprehension than the additives and the causals.

This conclusion contradicts many other research findings which revealed that the causal conjunctions are more beneficiary to reading process and reading comprehension than other conjunctive types (Caron et al. 1988 and Millis and Just 1994). It seems that the mechanism Murray (1997) suggested for explaining his findings (i.e. continuity hypothesis) needs more testing. There is also a doubt that the samples chosen from each conjunctive type to represent the other members are actually representative. Different conjunctions relating to the same type could have a different impact on reading comprehension.

4.3.6. Ozono & Ito (2003)

Ozono and Ito (2003) examined the effect of what they called 'logical connectives' and the semantic relations they signal on the comprehension of written

text. This investigation also considered the relationship between the level of language proficiency and the benefit from conjunctions in reading comprehension.

Japanese university students studying English as a second language were the participants of the study. The research participants were divided into two groups according to their English proficiency, a low proficiency group and a high proficiency group.

Three conjunctives representing three semantic relations were used. Adversatives were represented by *however*, causals by *therefore* and illustratives by *for example.*

The findings of the study showed that both low and high language proficiency groups benefited from the explicit presence of conjunctions in the texts used for testing their reading comprehension. However, the high proficiency group depended less on conjunctions since it was easier for them to recognize the semantic relations found in the texts without the assistance of conjunctions. The low proficiency group performed better in their reading comprehension with the presence of conjunctions. Certain types of conjunctions appeared to be more useful to reading comprehension than others. For instance, "unlike the high group, the low group tended to find *however* more difficult than *therefore*, and *therefore* more difficult than *for example*" (Ozono & Ito 2003, p. 290).

This finding could be explained by what Ozono and Ito (2003) called the 'cognitive load', which they defined as "the psychological load imposed on the reader's processing capacity by linguistic constituents within text" (ibid. p. 293). They argued that this theory could explain why *for example* is processed more easily than *however.* With *for example,* there is a small amount of cognitive load since the

direction of reasoning coincided with the reader's reasoning direction, *however*, in contrast, collides with the reasoning direction.

Another explanation could be the frequent use of the conjunctives used in this study. Conjunctions with high frequency are easy to identify and use, whereas low frequently conjunctions such as *however* are not always easy to identify and use. It is believed that "the frequency of *therefore* as a lexical item is much lower than that of *for example*" (Ozono & Ito 2003, p.294).

Based on this, Ozono and Ito (2003) recommended that low proficiency language readers should be taught conjunctions individually rather than as a group because some conjunctions are more difficult to learn than others.

The findings of this study, together with the studies reviewed above, examined only one or two conjunctions from each conjunctive type investigated. It is suggested that the findings of these studies could only be considered as indicative of the actual impact of the types of conjunctions on the reading process and reading comprehension because a few conjunctions were used to represent each conjunctive type. Only Goldman and Murray's study had sufficient representatives from each conjunctive type.

4. 4. The finding that conjunctions have no effect on recall and comprehension

Some of the studies reviewed above found that texts with the explicit presence of conjunctions are better comprehended and recalled than texts with implicit semantic relations. Many others suggested that certain conjunctive types are more facilitative of reading comprehension and recall than others. Next, an example of the few studies which claim that conjunctions have no effect on reading comprehension will be reviewed.

4.4.1. Irwin (1982)

Building on her previous study (Irwin 1980) which revealed that causal conjunctions facilitate comprehension, Irwin (1982) devoted this study to the investigation of the impact of lexical cohesive devices (grammatical repletion) and conjunctions in general on recall and reading comprehension.

This study suggested that argument repetitions and conjunctions are useful linguistic items to readers because their explicit presence in written texts leads to the recognition of semantic relations. On the other hand, the absence of these items could lead to the consumption of more time in inferring the implicit semantic relations the writer uses to make his/ her text coherent and consequentially understandable.

Irwin's (1982) experimental materials consisted of four versions of a text: three were modified to include argument repetitions and inter-clausal conjunctions individually and together and the fourth text had no explicit cohesive devices (i.e. conjunctions and lexical devices).

Native speaker university students were instructed to read texts about history silently for comprehension. Then they were asked to write down everything they remembered. Time for reading was calculated, but for the recall session unlimited time was offered.

Contrary to the assumptions suggested for this study, there were no significant differences in the recall performance with all text versions. Reading time was also approximately similar. It was concluded that cohesive devices (i.e. repletion and conjunctions) neither facilitate recall nor speed it which meant that their presence or absence did not make any significant difference.

With the testing comprehension materials used it is not surprising to get these results. It is expected that native speakers can easily comprehend and recall historical

texts written in their mother tongue because of the heavy background knowledge participants had about historical topics. In addition, there was no mentioning of the kind of conjunctions used. It is well known that different kinds of conjunctions could have different impact on reading comprehension and recall.

4. 5. Conjunctions have negative impact on reading comprehension

Unexpectedly and contrary to many research findings, a handful of studies revealed that some conjunctions have a negative effect on recall and comprehension (e.g., Millis, Graesser and Haberlandt 1993). This research will be critically reviewed next.

In an article published in 1993, Millis, Graesser and Haberlandt investigated the influence of conjunctions on memory of a expository text. Three experiments were designed to examine whether the presence of conjunctions between clauses in written text has any facilitative impact on memorising short passages.

Millis et al. (1993, p.318) recognized the points of view which suggested that conjunctions "increase textual cohesion by explicitly specifying the appropriate semantic relationship(s) between clauses and increase the memory for text" (Halliday & Hasan 1976, Caron et al. 1988, Murray 1997, Ozono & Ito 2003). However, the diverse testing materials used in these studies and the procedures adopted have opened the door for more investigation of this topic.

The subjects chosen for the study were asked to read expository texts modified to either contain conjunctions or have no conjunctions, and recall them immediately after finishing reading. Two types of conjunctions were used in the conjunctive version passages: temporal, causal and intentional conjunctions. These conjunctive types were represented by *so that* and *in order that*. They defended their conjunction selection by stating that "the temporal and causal [conjunctions] preserve the natural

time-ordering of the events that occur in a scientific mechanism" (Millis et al. 1993, p. 319). However, they excluded additive and adversative conjunctions because they believed that these types could disrupt the time-ordering of the event.

The findings of the study are summarized as follows: there is no significant difference in recalling the no-connective version and the causal and the intentional conjunction versions. The no-connective version was recalled significantly better than the temporal conjunction version.

These surprising results are in contrast with all the studies findings mentioned above which stated that all conjunctive types facilitate recall and reading comprehension by helping the reader infer what come(s) next in the text and integrate it with the segments of the prior text.

Many explanations were given by Millis et al. (1993) to justify these findings. They based their argument on three theoretical perspectives: an elaboration based perspective, a resource allocation perspective and a semantic compatibility perspective. In the first perspective, they claimed that conjunctions "constrained readers from generating addition elaborations beyond the explicit [conjunction]" (ibid. p. 335). In the second perspective, they argued that conjunctions increased the working memory load by consuming more reading time. The third perspective concerns the appropriate use of the conjunction. If the conjunction is correctly used by the writer, the reader can interpret the semantic relation correctly and if the opposite happens the reader suffers.

It is always assumed that writers are qualified enough to use conjunctions properly. Such an inappropriateness of conjunction use could be observed in the modified texts used for educational experiments. Texts prepared for language experimental studies are often modified to suit the purpose of the study.

In addition, Millis et al. (1993) examined the impact of conjunctions on memory shortly after reading, whereas this finding could be different if comprehension was tested after a long period and with longer texts dissimilar to the short expository ones used in this study. Furthermore only causal and temporal conjunctions were examined, which meant that their findings could not be generalised to include other conjunctive types such as additives and adversatives. Finally, it is worth reminding the reader that recall is different from comprehension, even though successful recall presupposes satisfactory understanding of the written text.

A short summary of the findings of each study mentioned in this chapter is found in Table 5 below.

Table 5 Summary of some research findings investigating the effect of conjunctions on reading process, recall and reading comprehension

Impact of conjunctives on reading comprehension	*Researchers*	*Study findings*
All conjunctive types facilitate reading comprehension	Chaudron and Richards (1983), Chapman (1983),Sanders and Noordman (2000), Geva (1992),Chung (2000), Degand and Sanders (2002)	Explicit presence of conjunctions contributes to the cohesion and coherence of the written text and consequently facilitates reading comprehension.
Some conjunctive types have better effect on reading comprehension than others.	Cooper (1983)	Additive conjunctions are the easiest and adversatives are the most difficult to text understanding.
	Caron et al. (1988)	Causals are the easiest and additives and adversatives have similar level of difficulty.
	Goldman and Murray (1992)	Causals and additives are equally the easiest, adversatives and sequentials are difficult.
	Millis and Just (1994)	Causals speed the integration of the joined sentences. Adversatives lower the speed of integration.
	Murray (1995/ 1997)	Adversatives are the most facilitative conjunctive type to reading comprehension. Other types are less important.
	Ozono & Ito (2003)	Adversatives are more difficult than causals which are more difficult than additives to reading comprehension.
Conjunctions have no effect on reading comprehension	Irwin (1982)	L1 readers are indifferent of the presence of conjunctions in written text.
Conjunctions have negative effect on reading comprehension	Millis et al. (1993)	Conjunctions make text longer and add heavy load on the brain, which slow the reading process.

4.6. Reasons behind the contradictory findings of researches

As the reader of this chapter may have observed, most of the studies reviewed above support the positive effect of conjunctions on the reading process, recall, and the comprehension of written texts. Less time in reading, better recall after reading and better answers to comprehension questions are some of the benefits readers get from the explicit presence of conjunctions in written text. However, this positive effect is not similar with all conjunctive types. It has been found by many studies that some conjunctions are more effective in facilitating reading comprehension than others. In contrast, a few studies reveal that conjunctions have no effect either on the reading process or on the final reading production. A handful of studies claim that conjunctions have a negative effect on the reading process, recall, and the reading comprehension.

These diverse findings suggest that several plausible reasons could contribute to their contradictions. Some of these factors could be attributed to the readers. This may include the readers' language proficiency and whether they are L1 or L2 readers. Other reasons could be related to the testing materials used by researchers or to the research methods and procedures applied in the studies.

Degand and Sanders (2002) highlight some of these reasons, recommending that linguists and psycholinguists should consider these factors if they are to guarantee reliable and objective results to their studies. Recognizing that "there is no consensus on the exact role of explicit [conjunctions] in text", Degand and Sanders (2002, p.470) suggest the following possible reasons:

1. As an open list, conjunctions have no single definition which could be applied to all members of this category. Since recognizing conjunctions as an independent category, linguists and psycholinguists have been working on certain characteristics

which could cover all conjunctions (see Chapter Three). However, so far no consensus on a single unified list has been achieved. Even what is called by this thesis (conjunctions/ives) other linguists insist on labelling them, for instance, connectives, discourse markers and many other labels. These diverse labels, definitions, and properties have led to proposing many lists with different features. When such items are used in experimental studies, diverse findings are expected.

2. The measuring materials used in many studies vary from a pair of unrelated sentences, related sentences or texts consisting of a few/many paragraphs. Many materials are ill-formed because they are modified to fulfil certain objectives which come at the expense of the content and the authenticity of the text. In many cases "the manipulation of the structure without varying the content leads to ill-formed texts" (Sanders and Noordman 2000, p.40).

Furthermore, conjunctions are treated by many linguists and psycholinguists as if they are "linguistic elements that can be "plugged in" between two sentences, no matter what the content of the sentences or the plausibility of the coherence relation" (Degand and Sanders 2002, p.741).

Unless there is a logical matching between the meaning of the conjunction and the meaning of the joined clauses/sentences, the reader will face difficulty in processing the linked clauses or sentences and understanding them. For example, Caron et al. (1988) and Millis and Just (1994) chose unrelated sentences as the materials for their studies. In such cases the reader is exposed to a difficult task since there is no matching between the meaning of the conjunction and the content of the given unrelated sentences.

3. Many data collecting methods used are not sensitive enough to measure the impact of the conjunctions on reading comprehension. Methods such as free recall are not a precise measurement of global comprehension. Degand and Sanders (2000, p.741) suggested that "other methods such as recognition, question answering or sorting ...might be more sensitive in this respect".

4. Many factors related to the reader are not properly considered. Characteristics such as the background knowledge of the topic and the objectives the reader wants to achieve by reading are not always taken into consideration.

Degand and Sanders (2002, p.741) argued that "readers who have a high degree of knowledge in the content domain are more likely to supply the information independent of the signals in the text".

Language proficiency is another important influencing factor which many researchers ignore (e.g., Irwin 1982). Low proficiency readers are not expected to identify conjunctions or recognize their meaning and the semantic relations they impose on written text.

Finally, the participants selected for studies are recommended to have homogenous characteristics such as age and level of language proficiency "if we want to get a clear view of the role of the relational signals" (Degand and Sanders 2002, p.741).

4. 7. Summary

Since conjunctions have become the focus of research investigation, linguists, psycholinguists, and language teachers have worked to clarify the nature of relationship between conjunctions and reading comprehension. Many studies have investigated the reading process, recall and reading comprehension and used many types of conjunctions.

The findings of various studies reveal that a text with an explicit presence of conjunctions has a better chance of being processed, recalled and comprehended by readers than a text with no conjunctions. However, it was also found that some conjunctive types are more facilitative of reading comprehension than others. For example, causal conjunctions were found to be more useful to second language readers than adversative conjunctions.

In contrast, a few studies have come to conclude that conjunctions have no effect on the comprehension of written text. The researchers of these studies believed that a text is coherent with and without conjunctions and skilled readers can predict the semantic relations existing between text sentences without the assistance of conjunctions.

Finally, a small number of studies found that conjunctions have a negative impact on the reading process and reading comprehension since they lengthen the joined sentences and delay their final integration. It is suggested that these contradictory findings are attributed to some of the causes discussed above.

The lack of consensus on the actual impact of textual cohesive conjunctions on reading comprehension encouraged the researcher to contribute to this debate by investigating the impact of textual cohesive conjunctions on the reading comprehension of fourth year English Department students in two Libyan universities. It is hoped that this contribution can shed some light on this topic. This was done by the application of two intervention programmes in Gharian and Sabrata English Departments. These programmes included explicit teaching of conjunctions for three months and pre-post testing the participants of these programmes. The next chapter will present the methodology of this study.

Part two

Methodology and data analysis

Chapter Five

Research Methodology

5.1. Introduction

In the previous chapters the literature related to textual cohesive conjunctions and their impact on reading comprehension was reviewed. By considering Halliday and Hasan's (1976) cohesion theory, the independent variable in this study (i.e. conjunctions) was defined and classified. Reading comprehension as the dependent variable was closely examined both as a process and as a production even though the production is the main focus in this study. The literature relating to the relationship between conjunctions and reading comprehension was critically reviewed.

This chapter will present the research methodology which is the major element in any research work that is used to understand and explain the research topic under investigation. It will present the research questions and discuss the research design, research methods, describing the sample, instrumentation, and procedure of the study.

All these stages will be scrutinized to assure maximum validity and reliability, which will be discussed in relation to the research methods adopted, the instruments used and the procedures followed. Finally, ethical issues will be discussed in relation to the research procedures.

5.2. Research problem

Reading for comprehension in English as a foreign language is the major aim of joining any English reading course. When joining English departments, Libyan university students spend four years studying all language skills including reading in

English. However, it has been observed that little progress is achieved in their reading comprehension efficiency. This has been revealed by the number of students who fail reading courses every year in comparison with other English language courses. Even students who managed to pass the reading course usually get only the minimum score, which is 50 out of a hundred. For example, the reading for comprehension course results of the third year English Department students in Sabrata in the academic year 2003/2004 showed that 57.14 per cent of the students who passed the course got 50, 30 per cent got scores varying from 51 to 65, and only 12.85 per cent got scores over 66 as Table 6 below shows.

Table 6 Sabrata 3rd year reading comprehension scores

No. of students	*Score*	*Percentage*
40	50	57.14
21	51-65	30
9	66-100	12.85

This low level achievement in the reading course test suggests that the reading comprehension of Libyan university students studying in English departments is poor and something has to be done to improve it. Many possible factors contribute to this situation. Factors such as syllabus, teaching methods, and lack of trained teachers, are important and deserve to be investigated. This study, however, focuses on the content of the syllabus. By revising the literature related to reading skill it has been observed that focusing on certain language grammatical items could contribute to the facilitation of reading comprehension. Conjunctions are one of the grammatical devices which are found to facilitate reading comprehension if they are explicitly taught. Conjunctions as defined by Halliday and Hasan (1976) and their relation to reading comprehension are the focus of the investigation here.

Many studies have investigated the impact of textual cohesive conjunctives on reading comprehension. Diverse findings have been found. Some are in favour of the benefit of conjunctions to reading comprehension, and many others have come to the conclusion that certain conjunctive types are more facilitative to reading comprehension than others. Others suggest that conjunctions have no positive effect, and a handful of studies claim that conjunctive items have negative effects on reading comprehension. However, several research studies done by prestigious linguists and psycholinguists have found that conjunctions facilitate reading comprehension (Stoodt 1972; Chapman, 1983; Caron et al., 1988; Goldman and Murray 1992; Sanders and Noordman, 2000; Chung, 2000; Degand and Sanders 2002 and Ozono and Ito 2003; Rummer, Engelkamp, and Konieczny 2003). These various point of views indicate that so far there is no consensus on the actual impact of conjunctions on reading comprehension. This study is a contribution to shed some light on this topic.

5.3. Research questions

The researcher approached this study guided by the following major thesis questions:

Are students in their fourth year of learning EFL in the English Departments of Gharian and Sabrata Universities, Libya able to identify the textual cohesive conjunctions and interpret their function correctly in their reading comprehension after they are explicitly taught conjunctions? Do they benefit from being explicitly taught about textual cohesive conjunctions in their reading comprehension course?

The data collected in this study tried to answer the following research sub-questions:

1. What is the attitude of fourth year English department students in Libyan universities towards conjunctions and their relations to reading comprehension?

2. Can the study participants identify the items which function as conjunctions, interpret their function, and justify their choices of the multiple-choice rational cloze reading comprehension test correctly?

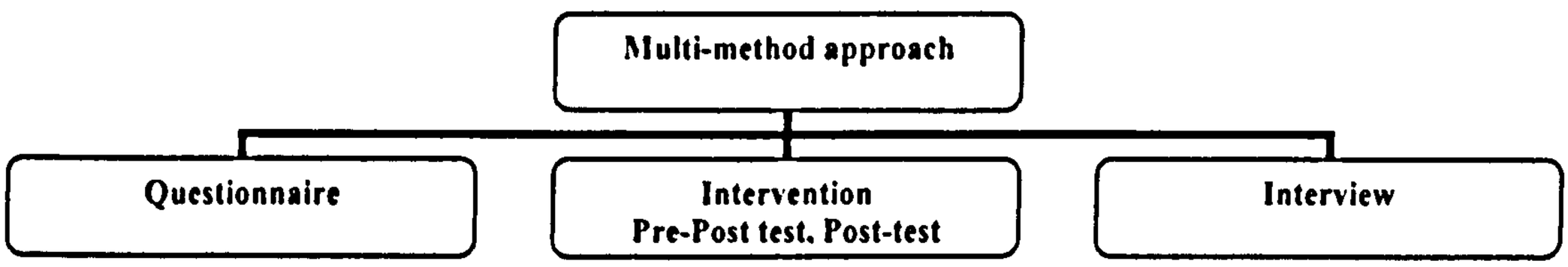
3. Does the ability to identify conjunctions and recognise their function facilitate the reading comprehension of the study participants?

4. Are some conjunctive types more facilitative to reading comprehension than others?

5.4. Research design

Considering the focus of this study, which is the investigation of the impact of textual cohesive conjunctions on reading comprehension, it was decided to adopt a multi-method approach to collect the needed data for this research by the participation of fourth year English Department students in Libyan universities studying English as a foreign language. This included a questionnaire, intervention, and an interview. As shown in Figure 2 below, the multi-method approach, or triangulation, is defined by Cohen, Manion and Morrison (2000, p.112) as "the use of two or more methods of data collection in the study of some aspect of human behaviour." Learning languages, for example, as a complex human behaviour could be better understood and explained by adopting more than one research method. Qualitative and quantitative data were collected to enrich the investigation of the topic under scrutiny and strengthen the validity of the study. In contrast, a mono-method approach "may bias or distort the research's picture of the particular slice of reality [the researcher] is investigating" (Cohen et al. 2000, p. 112).

Figure 2 The multi-method approach adopted in this study



Multi-method approach technique is usually used to confirm the results of a single approach as in its application in natural sciences. In social science, more than one research method can be used in a complementary design in order to get valid data needed for the topic under investigation, as in our case here. This combination is necessary since as Smith (1991, p.486) emphasizes, "each method has advantages and disadvantages that limit its ability to measure abstractions, as 'social class' and 'cohesion'."

The main emphasis of this study is the collection of quantitative data through the application of two intervention programmes. This quantitative approach included *pre and post- tests* and *post-test only* experiments. The first one organised in Gharian English Department and the second, i.e. the '*post-test-only*' experiment, was held in Sabrata English Department.

The rationale behind adopting experimentation as the prime method of investigation was to examine whether the reading comprehension of Libyan university students improved if they were explicitly taught conjunctions in their reading comprehension course. In other words, there was a need to assess whether explicit teaching of conjunctions causes an improvement in the reading comprehension of Libyan university students. This meant that the participants in the experiments were randomly assigned to two groups. One group was explicitly taught conjunctive items (i.e., the treatment group), and another group was taught the traditional syllabus (i.e.,

the comparative group). And by pre and post-testing both groups and comparing their tests results, we could know whether the teaching of conjunctions had any significant effect on the reading comprehension of the treatment group.

This, of course, could better be achieved by using the same measuring instrument in both tests. Using different instruments for the post-test could affect the internal validity of the experiment, as stated by Campbell and Stanley (1972). However, as mentioned above, in the second experiment only a post-test was used. Both tests instruments included three components: a conjunction identification test, function recognition of conjunction test and a multiple-choice rational cloze test for reading comprehension assessment.

The reason behind organising two experiments in two different places was to get more data away from the possible negative effect of pre-testing. Many researchers argue that pre-testing may influence the results of the post-test. This could have a negative impact on the validity of the experiment. For example, Bryman (1989, p.85) reported that "the effects of pre-testing cannot be ignored." In agreement with this, Cohen et al. (2000, p.214) argued that "an interaction effect may occur as a result of the pre-test measure sensitizing the subjects to the experimental variable." This possibility was very low here because the interval between pre and post-test was long enough for the students to forget about the content of the pre-test. However, data collected by the second experiment were used as a confirmation of the first experiment result.

Before the administration of the post-test, the treatment groups both in Sabrata and Gharian English Department were exposed to a teaching programme which acted as an intervention designed to focus on explicit teaching of conjunctions and how to use them in reading comprehension. However, before the content of the teaching

programme was decided, the participants in the experiments (i.e. the intervention programmes) were asked to complete an attitudinal questionnaire. This preliminary method was chosen to explore the attitude of the students towards conjunctions: whether they could identify conjunctions, any difficulties they experienced, their confidence in using them in their reading comprehension, and to what extent conjunctions were included in their current syllabus and classroom activity. These forms of information were essential to the selection of the teaching materials prepared for the intervention programme.

In addition to the questionnaire findings which were used as a guide to designing the reading intervention programme, other factors were considered. The programme was prepared by consulting the current reading course lecturer and the head of the English Departments. This was because the selected materials were used as the main syllabus for the reading comprehension course of all fourth year students. However, what distinguished the research intervention programme which was taught to the treatment groups from the traditional syllabus was the inclusion of different activities (suggested by Salimbene and Widdowson 1986). Those activities focused on conjunctions and their use in reading comprehension. In other words, the focus of the intervention programme was the explicit teaching of conjunctions and their facilitative role in reading comprehension. Apart from that, similar reading texts were used by both treatment and comparative groups and time period allocated to the intervention programme was similar: two hours per week.

The teaching of reading programme lasted for12 weeks. Students were taught how to identify conjunctions and to recognise the semantic relations they signal in written texts. Doing so, they were trained to use them as signals to text understanding. This included their local and global functions. Many other activities relating to

conjunctions were included in the programme. For example, using conjunctions in constructing coherent text was a regular activity in the programme.

All participants in the intervention programmes, including the comparative groups, were instructed to attend the sessions of the post-test soon after finishing the application of the reading programme. The participants of the intervention programme in Gharian answered the same questions they saw in the pre-test. In the same way, both Sabrata intervention groups had the same test given to the Gharian groups. However, the treatment groups were located in separate rooms away from the comparative groups to exclude any possible cheating. That was managed by the assistance of other teaching staff colleagues.

The post-test was immediately followed by a semi-structured interview. This type of interview was designed to collect qualitative data concerned with students' justification of their answers in the post-test. Participants of the treatment groups were asked to justify their conjunctive type choices in the multiple-choice rational cloze test and gave their attitude towards the test difficulty. This was necessary to understand how far the participants depended on their knowledge of the conjunction functions when they had their conjunctive choices.

Data collected will be analysed and interpreted in the next chapter and the findings will be used as the basis for the recommendations that will be suggested to teachers of reading comprehension, designers of the reading courses curriculum and to educational policy makers.

5.5. Research participants

Libyan universities are widely dispersed throughout Libyan territory and travelling from one university to another takes hours, if not days, and costs money. Because of this, universities in close proximity were selected for the study.

Five neighbouring state universities participated in the study. These universities included Seventh April University, Aljfara University, Gharian University, Aljabal Algarbi University, and Alwatheeka Alkhadra/ Sabrata University.

Out of a total number of 325 fourth year English department students in the five mentioned universities, 200 attended the completion of the self-questionnaire sessions which lasted about forty minutes. 30 students from Gharian University contributed to the first intervention programme: 15 students in the treatment group and 15 in the comparative group. 70 students from Sabrata English Department participated in the next post-test only intervention programme: 35 in each group. However, from the 50 students who were assigned to the treatment groups in Gharian and Sabrata, 37 accepted to be interviewed by the researcher: 14 students from the Gharian English Department and 23 from the Sabrata English Department. This could be attributed to the lack of confidence to speak in English and being aware that they would be audio recorded.

Four other universities were not included in the study because one of them, Al-Fateh University, assigns the reading comprehension courses in first and second academic years, and the other three universities are far from the researcher's permanent residence. Traveling to the cities of Sabha and Benghazi, for example, where the two universities are located needs airplane tickets and at least two days hotel bill.

Considering the difficulties mentioned above, the researcher decided to apply the intervention programmes in Gharian and Sabrata English Departments. Even though the students selected for the study were not randomly chosen it can be claimed

that this sample represented all fourth year English departments students in all Libyan state universities for the following reasons.

The Libyan standard educational state system obliges all students to follow the same curricula, taught by teachers with the same qualifications, and spend the same time in schools. English as one of the obligatory subjects assigned to preparatory and secondary schools is not excluded from this system.

It has been planned that students of both levels have to attend English classes of about forty-five minutes four times per week throughout six years. With a simple calculation it can be said that students are exposed to about 500 hours of learning English before they join university or high college. Theoretically, this time looks long enough to give students the necessary background knowledge of English which could qualify them to join any university with ease. Practically, university English professors complain that students' English is below the expected level.

In addition, joining any state university is conditioned by the fulfillment of certain requirements which have to be respected by all Libyan state universities. For example, students can only join English departments if they have, (good) level equivalent to 65 per cent or more. This percentage, of course, does not mean that candidates are fluent in English in general and in reading skills in particular. The average score of the high school diploma is calculated by the total scores of all assigned subjects including Arabic language and Islamic sciences.

Students who are admitted to English departments at the university level spend four years studying English language skills and other courses related to the history, language and the religion of the country. In this time, they have to pass about forty-five courses to be able to get the certificate, Bachelor of Arts (BA).

The age average of the study participants was 22 years old. 90 per cent of the students who completed the questionnaire were females and 10 per cent were male students. Interview sessions were attended by 37 respondents, 80 per cent of them were females, and 20 per cent were male students. And 85 per cent of the students who participated in the intervention programmes organised in Gharian and Sabrata English Departments were female students.

The sample selected for the two experiments which were organised in the Gharian and the Sabrata English Departments were assigned to the intervention comparative and treatment groups as follows.

Fourth year English department students in Gharian were divided into two groups by using their third year reading comprehension scores. The scores were arranged in an ascending order and every student was given a number in the list. After that odd numbers were listed and assigned to one group and even numbers were assigned to the second group. Again, the researcher randomly picked one of the lists to be the treatment group, which was labeled as group (A), and the other group was labeled as the comparative group and given the letter (B). This random division had high validity because no significant difference was found between the third year reading course scores of both groups and between their pre-test result scores. In other words, it was found that the difference between the third year reading comprehension score means of the two groups was not significant since P. value is bigger than .05 as Table 7 below shows.

Table 7 T-test analysis of the pre-test results of study groups in Gharian Eng. Depart.

Pre-testing reading comprehension	*Mean*	*SD*	*T*	*P-value*
Comparative group	38.66	10.25	.078	.939
Treatment group	39.00	13.12		

In Sabrata English Department, and due to the large number of students (over a hundred students), different tactics were adopted. All students who were officially registered in the fourth year as regular students were typed in one list and numbered from one to a hundred and sixteen. The list was divided into three groups: group (A) started from one to thirty seven, group (B) from thirty-eight to seventy-four and group (C) started from seventy-five to the last number which was a hundred and sixteen. Finally, the researcher was offered the chance to randomly choose any of the groups to be the treatment group and another one to be the comparative group. And since the researcher is neither a former teaching staff member of Sabrata English Department nor a resident of Sabrata city, selecting any group would not have any preference. So randomly, group (A) was chosen to be the treatment group and group (B) as the comparative group.

The target number of students planned to be interviewed was about fifty-two. However, due to practical difficulties the researcher managed to interview thirty-seven students from both departments, which was believed to be enough for verifying students' performance of the reading comprehension post-tests.

5.6. Research procedure

A thorough review of the literature related to conjunctions and their relations to reading comprehension and to the methodology used to investigate the impact of the textual cohesive conjunctions on reading comprehension guided the design of the study. This design led the researcher to adopt the following procedures:

1. Draft research questions was prepared as major guidelines for the direction of the study. These questions were verified by reading of the related educational methodology literature and by the assistance of my supervisor.

2. By consulting references focusing on educational research methods such as Cohen, Manion and Morrison (2000), Bryman (2001), McBurney (2000), Smith (1991), Campbell and Stanley (1972) among many others, it was decided to adopt a multi-method approach to collect the needed data for answering the research questions.

3. Experimentation was chosen to be the major data collection method. It was complemented by further methods: a. a questionnaire was chosen to be a preliminary method for collecting data needed for designing the reading intervention programme; b. a semi-structured interview for justifying the treatment groups' answers in the reading comprehension post-test.

4. Contacts via telephone and letters were made with the universities selected to be the sources of data collection. All of them offered their cooperation. Written approvals were received from two participating English departments: Gharian and Sabrata. (Copies of the approval letters received from the Gharian English Department and Sabrata English Department are found in the appendix 1.2, 1.4)

After these necessary preliminary steps were completed, the research instruments were designed.

5. All the measuring instruments used for the study were prepared and their validity was tested. The questionnaire, the tests for the experiments, the intervention reading programme, and the interview questions took considerable time and effort to prepare and get the green light from the supervisor for administration.

6. The questionnaire items and the experimental measuring instruments went through various stages of developments before they took their final versions. That included consulting native speaker Ph.D. students and foreign language Ph.D. students about the questionnaire items and the pre and post-test measuring instruments. Furthermore, both instruments were piloted to assess their difficulty and the time they needed for

administration. The semi-structured interview questions were prepared with the assistance of the supervisor.

7. Enough copies from each instrument were printed: more than 250 copies of the questionnaire and 135 copies of the test instruments were prepared to be used in pre-post tests. The extra copies prepared were to replace any copy found to be not clear in printing or to replace any copy spoiled by any respondent such as pouring ink or water on it. This happened though all copies were double checked to be sure that the targeted number was ready and printing was clear and attractive.

8. Saturday 11th of December 2004 witnessed the first meeting with fourth year Gharian English Department students. The general objectives of the study were explained to them. The researcher asked for their consent to participate in the study. All of them happily accepted to offer their full cooperation to assist the study. That enthusiasm was related to the personal relationship of the researcher with the department as a former lecturer in it and to the nature of the study which was the first of its kind to be organised in this department.

9. To save time, the pre-test was administered in the same Saturday. 32 students attended that test. However, two students were excluded from the intervention programme when the researcher discovered that they were external students. Students were seated far from each other and by the assistance of a lecturer colleague the test was completed in an ideal environment. A few questions were raised by some students regarding meaning of words and questions. The researcher explained all questions by referring to the examples mentioned in the test whenever necessary. Sabrata intervention groups had no pre-test for the reasons mentioned above.

10. The pre-test was organised in the morning to guarantee that the students were fresh, active and motivated enough to stand the pressure tests usually cause.

Furthermore, any tension or stress was defused by explaining to the participants that the test results would not be involved in their academic progress assessment which meant that the result would not have any negative impact on them. That encouraged all students to write their full names on the test papers.

11. The participants were informed that the main objectives of the pre-test were to assess their reading comprehension proficiency and to help the researcher in dividing them into two similar groups: a treatment group and a comparative group.

12. Test forms were collected and checked carefully to guarantee that missing data were kept to a minimum. The participants were asked to complete any unanswered questions before they handed the papers to the researcher. Question forms were carefully counted to be sure that no leakage of forms outside the classroom occurred.

13. The meeting with the fourth year Gharian English Department students witnessed the completion of the attitudinal questionnaire. Sabrata and three other English departments finished the self-completion questionnaire at the same week.

14. The questionnaire items were piloted before they were completed by the targeted respondents. Twelve fresh university graduates working as English teachers in three neighbouring secondary schools in Libya volunteered to complete the questionnaire and the test prepared for the intervention programmes. Three criteria were considered by this study: wording of questionnaire items, their clarity, simplicity and the time needed to complete the questionnaire.

15. The administration of the questionnaire did not take a long time because all its items were clear as a consequence of its piloting. However, a few questions were raised by some students regarding how questions should be answered and the meaning of vocabulary.

16. The respondents were asked to write their names on the questionnaire since no sensitive or personal questions were included. All the questionnaire items were related to the respondents' attitude towards conjunctions and their impact on reading comprehension.

17. The questionnaire respondents were encouraged to answer all questionnaire items in order to minimise missing data. The instructions were directed by the researcher himself who attended all the questionnaire completion sessions to answer questions raised by the respondents.

18. Discussion with the heads of Gharian and Sabrata English Departments regarding the application of the reading intervention programme came out with the following arrangement:

a. Treatment and comparative groups in the Gharian and the Sabrata English Departments received an equal quantity of instructions and offered the same reading materials. However, the materials given to the treatment groups had activities related to conjunctions and their relation to reading comprehension. Two hours per week were allocated to the reading programme organized in both departments, which is compatible with the standard fourth year reading course programme.

b. The time period was fixed to be every Sunday from 9 to 11am. (Sunday is a working day in Libya) in Gharian English Department and Thursday in Sabrata English Department.

c. The target students were assigned randomly to two similar groups: comparative and treatment groups. That was completed by applying the procedure explained in Section 5.5 above.

19. The treatment group participants were informed of the timetable and the date of starting the intervention programme, and instructed to collect the syllabus materials from their departments to be ready for the first teaching session.

20. As planned, the reading programmes started as fixed in the schedule and continued to the time of the post-test. The programmes witnessed a few days of interruptions caused by national and religious public holidays which forced the researcher to extend the time in order to complete the prepared reading programme.

21. After students (i.e. the participants of the treatment groups) had completed the last lesson of the reading programme, they were instructed to be ready for the post-test. The participants of the comparative groups were also asked to attend the same test at the same time. However, this time two separate rooms both in Gharian and Sabrata were booked for organising the test as a precaution to prevent any possible cheating. The participants of the comparative groups could benefit from being mixed with the treatment groups who had more exposure to conjunctions and their functions which could affect the validity of the test.

22. The participants of both groups, treatment and comparative, attended the post-test. The testing session started at 9 am. and finished at about 11am.. In this test, time was not an important variable, so enough time was allowed to be sure that all students finished answering the questions without any pressure.

23. The same pre-test instrument was presented to all the participants, including the participants of Sabrata programme. As a result of this, the Gharian students had a few questions to ask and less time was used for completing the post-test. It was clear that the students did not expect to have the same test again. It came to them as a surprise. As in the pre-test, all participants wrote their full names on the test papers.

24. Immediately after finishing the post-test, the participants in the treatment groups in both departments were instructed to be ready for the semi-structured interview. Preparation for organising the interview was completed by getting the necessary permission from the head of the departments to audio record the interview. The tape recorder was checked and supplied with new batteries and enough tapes.

25. The interview sessions started in Gharian English Department at 12 am. in a well-furnished office made available by one of the department working staff. It was located in the heart of the department building away from noisy streets. A female employee attended all interview sessions for social circumstances mentioned in the interview section. A similar procedure was followed in Sabrata English Department.

26. The interview sessions lasted for about seven hours. The respondents from both Gharian and Sabrata English Departments were interviewed with an average of ten minutes per respondent. Almost all the respondents interviewed were asked the same questions. However, more explanation was offered to some students to clarify the questions and enhance the respondents' understanding. 37 students, 14 from Gharian treatment group and 23 from Sabrata treatment group, were interviewed. It was believed that the interviewed number was enough to give clear indication of the participants' justification of their post-test answers.

5.7. Research methods

As has been indicated, three methods were used to investigate the topic of this thesis. They were selected to complement each other and gather the quantitative and qualitative data needed for this research. In the following sections, every method will be discussed with the inclusion of reviewing the literature related to each method.

5.7.1. Experimentation

Teachers and university professors adopt many teaching methods in the classroom and focus on certain language aspects with the hope that such approaches and techniques improve learning outcomes and benefit their students. Many of these methods and approaches have had successful results. Many others, however, could be classified as controversial.

In educational research it is well known that the researcher's task is to find out the weakness or the failure of certain educational phenomenon in order to suggest a remedy or a solution to that problem. In qualitative research, participants are usually asked for the reasons for the problem and their response is analysed with the hope of understanding the phenomenon.

On the other hand, explanation and causality of the same phenomenon could be objectively traced by using experimentation. Clear causality could be established if the investigator manages to control the rival variables and manipulate the independent variable(s). As Bouma and Atkinson (1995, p.126) report, "while the other research designs provide useful information, the experimental design provides the most rigorous test of a hypothesis which specifies that X causes Y".

Experimentation is defined by Campbell and Stanley (1972, p.1) as "the portion of research in which variables are manipulated and their effects upon other variables observed."

By adopting an experimental approach many controversial issues in education could be refined and emphasised and, consequently, be valid for more confident application. However, experimentation has its limitation because, as Campbell and Stanley (1972, p.4) stress, "it is a refining process superimposed upon the probably valuable cumulations of wise practice". It is well known that clean and perfect

manipulation and controlling of all variables could only be applied in a laboratory with inanimate objects. In education, where participants are rational animate humans, ethical and legal constraints have to be considered.

Experimental participants in education, whether they are students, teachers or administrators, are active, rational human beings, which means that their motive and cooperation to participate in any experimental tasks have a major impact on the findings of experimentation.

Building on that, the researcher chose the experimental types which consider the participants' circumstances and the regulations applied by the educational authority in Libya. In addition, the validity and reliability of the research procedure, the instruments used, and the data analysis were always being checked carefully.

In this study two types of experiments were used:

1. Pre and post- test experiment was conducted at Gharian English Department,
2. Only post-test experiment was conducted at Sabrata English Department as shown in Table 8 below.

Table 8 Types of experiments organised in Gharian and Sabrata English Departments

Place of intervention	*Type of experiment*	*Test topics*
Gharian Eng. Depart.	Pre-post-tests exp.	Identification of conjunctions
Sabrata Eng. Depart.	Only-post-test exp.	Function recognition of conjunctions
		Reading comprehension

As mentioned above, the rationale behind organising two experiments in two different departments was to check whether the pre-test had any effect on the results of the post-test. Many experts in educational methodology believe that pre-testing has an effect on the post- test results. William and Putnam (1982) cited in Bryman (1989) argued that the post-test results could be affected by the pre-test. In line with this,

Bryman (1989, p.85) suggests that "the most obvious solution to the problem is not to pre-test. Studies using Design 6 [the experiment applied in Sabrata] (and its various applications) do not pre-test the intervention groups and so do not suffer from the effects of the pre-testing."

5.7.1.1. Measuring instruments

Testing reading comprehension can be achieved by using many types of tests. Tests such as open-ended, multiple-choice and rational cloze tests are widely used by school teachers and language researchers. In this research a *multiple-choice rational cloze test* was used as the measuring instrument for both pre and post-tests.

This test type has been used by many educational researchers because of its consistency and practicability. For example, Goldman and Murray (1992) used this test procedure to test the reading comprehension of their participants. Many other researchers have examined the validity of this test type and found it consistent. McKenna and Kent (1990; cited in Goldman and Murray, 1992), stressed the sensitivity of the rational cloze test to the inter-sentential integration. In line with this, Bensoussan and Ramraz (1984) compared the multiple-choice test with the rational cloze test (they label it as fill-in test). Their findings emphasized the validity of the rational cloze test as an important instrument for testing reading comprehension. They reported that, "the fill-in tests reading comprehension not only words and word forms at the micro level, but, more importantly, the ability to follow a logical thought sequence at the macro-level of reading" (Bensoussan and Ramraz 1984, p. 237).

Many advantages of this test type have been reported in the literature on testing reading comprehension. Among them are the following:

1. Its suitability as a valid test when the words and phrases in the gaps are function words such as conjunctions (the items we use in our test). Bensoussan and Ramraz (1984, p.232) recommended that,

> Function words, such as "however" and "therefore", would be good places for blanks. Other items tested could be cohesive markers such as "not only…but also", "either…or", and "on the one hand …on the other hand.

2. The second advantage of this test is its simplicity and flexibility to suit the specific needs of the designer.

3. It can be corrected easily and objectively.

Other reading comprehension tests have their limitations:

5.7.1.1.1. Open-ended questions limitations

1. Many students find this question type difficult to answer. On the one hand, the examinee needs to read the whole text more than once to get the answer. That could waste valuable limited time. On the other hand, students need to write the answer in full which is difficult for students with poor writing skill.

2. The wording of many open-ended questions could lead the examinee to find the answer regardless of his/her understanding of the text's meaning, and could offer the examinee useful information about the content.

3. The answers to the open-ended questions are difficult to correct and it is difficult for the corrector to be objective, which may affect the validity of the test.

5.7.1.1.2. Multiple-choice questions limitations

1. Among the common limitations of this test type is that students can easily cheat even if strict precautions are taken. Signalling the fingers is a common way of cheating among students.

2. It is a time consuming process since the examinee needs to read the whole text more than once in order to answer a few questions. In many cases time runs out before students manage to finish the assigned test.

3. It is difficult to prepare. If a test is piloted and it is found that some questions should be deleted, the whole text is ruined and rewriting it is the only way out.

4. Bensoussan and Ramraz (1984, p.231) highlight the theoretical issues regarding whether this test type is a valid method of testing reading comprehension. They claim that "it is not clear whether multiple choice scores reflect test comprehension, ability to choose the correct distracter, or both."

5. Another defect of the multiple choice test is that examinees could choose correct answers merely by chance. Students can tick one of the options related to a question in the hope that his/her random choice could be correct.

6. A final limitation was mentioned by Wolf (1993, p.474). He argues that "sometimes test items can be answered without reading the passage; that is, they are not passage dependent". An examinee could use his/her background knowledge of the world to recognise the correct answer. Such a claim, however, could only be justified if the test is poorly constructed. In summary, "it is for such reasons (and others) that the validity of traditional comprehension or multiple-choice test has been seriously questioned in recent years" (Davies 1995, p.28).

5.7.1.1.3. Traditional cloze test limitations

1. Unlike open-ended and multiple choice questions where examinees read a given text followed by questions, the cloze test serves as the reading passage. This means that the examinee has a text which has a global meaning but with systematic gaps embedded throughout, which require the examinee to supply suitable words from his/her mind. This is indeed a difficult task, especially for foreign language readers.

2. Some have argued that this test type is a test of linguistic skills. Much of the information needed to fill the gaps is grammatical or lexical items with no direct relation to reading comprehension. Wolf (1993, p.475) argues that items needed for the cloze test gaps "are often based on cues from the immediate environment around the blank rather than information from the whole text."

Due to the disadvantages of the test types mentioned above, the researcher decided to follow Goldman and Murray's (1992) steps selecting the modified version of the rational cloze test as an effective and consistent instrument for testing reading comprehension. This modification includes supplying for each rational gap three options from the same language category (i.e. conjunctions).

5.7.1.1.4. Test material preparation

Pre and post-tests materials were planned to be identical versions to strengthen the internal validity of the experiments. The materials consisted of three parts: conjunction identification test, function recognition of conjunctions test and reading comprehension test. It is important that the participants can identify conjunctions and recognise their function before they can use them in their reading comprehension. A description of the tests and justifications of their consistency are given below.

5.7.1.1.5. Reading comprehension test

The text selected for pre and post-testing the reading comprehension of the study participants was adopted from Mosback and Mosback (1976). It was an expository text prepared along with many others to be a part of reading comprehension syllabus for foreign students learning English as a foreign language. The reason behind choosing an expository text was the belief held by many language researchers, such as Goldman and Murray (1992, p.504), that "the less a reader knows

in the domain, the more important is knowledge of how general linguistic devices may be used to ascertain the local and global structure of the text." Furthermore, Sanders and Noordman (2000, p.39) recommend that,

> We explicitly focus on expository text here because we believe that the bias for (simple) narratives threatens to be a problem [because] simple narratives and stories have a very peculiar structure, which is not very complex and quite stereotypical..., whereas expository text usually describes new information that the reader does not know about.

Thus, it is assumed that foreign language readers of expository text need to use conjunctions as signals in order to understand the text message because of their lack of external information related to the topic.

The text was modified to accommodate 20 conjunctions: five from each conjunctive type. Some of them existed in the original text. A few others were added to balance the number of conjunctions from each type. The passage was designed to take the form of a rational cloze test. The cloze slots were supplied with three conjunctions from different types in the form of multiple-choice alternatives. Choice of conjunction was directed by the semantic relation existing between the preceding and the following independent sentences or sometimes paragraph when the relation is global.

The text selected (i.e. canning food) was one of about fifteen other texts chosen and revised carefully to be used as reading course materials for university adult non-native speakers of English. The authors, Mosback and Mosback (1976, p.vii), emphasise that "the vocabulary level basically corresponds to level 5 of the *Cambridge English Lexicon*, and is entirely within the 5,000 words of the *ladder*

vocabulary, developed initially by the United States Information Service." The text consisted of 640 words in 22 paragraphs.

All the conjunctions accommodated in the testing text were borrowed from Halliday and Hasan's (1976) taxonomy of conjunctions, since Halliday and Hasan's cohesive theory was adopted as the theoretical framework of this study. In their taxonomy, they divided conjunctions into four types according to their semantic function: additive, adversative, causal and temporal.

From the additive conjunctive type *and, furthermore, not only, for example, in other words* were chosen; from the adversatives *still, yet, whereas, nevertheless, however*; from the causals *arising from this, therefore, since, consequently, thus*; and from the temporals *then, at this point, at this moment, firstly* and *finally* were selected as shown in Table 9 below. (The full reading comprehension test is found in the attached appendix 3.3)

An attempt was made to balance the most common and familiar conjunctions such as *and, yet* and *then* and the less frequent ones such as *nevertheless* and *thus*. No conjunction could be used more than once throughout the passage.

Table 9 Conjunctive types and their positions in the reading comprehension test

	Conjunctive types							
Conjunctions	Slot No	Additives	Slot No	Adversatives	Slot No	Causals	Slot No	Temporals
	5	And,	4	Still	1	Arising from this,	3	Then
	10	Furthermore,	7	Yet			8	At this point
	13	Not only,	17	Whereas	2	Therefore	14	At this moment
	16	For example	12	Nevertheless	6	Since	11	Firstly
	20	In other words	15	However	9	Consequently	19	Finally
					18	Thus		

To emphasise the validity of the test it was given to three native speaker PhD students to evaluate the suitability of the conjunctions to the logical cohesive relations

existing in the text. The cohesion and coherence of the text were checked carefully. Many suggestions were offered and they were carefully considered by the researcher.

In addition, the test was sent by e-mail to five foreign PhD students studying linguistics and education at the University of Newcastle. Their feedback suggested that about 85 per cent of the conjunctions were located in the correct cloze slots. Only three conjunctions were replaced by other clearer ones from the same type to maintain the balance of the numbers of the conjunctive types. All these steps were conducted under the close supervision of the research supervisor.

To facilitate test correction and the organization of the justification interview, which was planned to immediately follow the post-test, gaps were numbered in small print.

Finally, all punctuation marks which follow the conjunctives used in the text were omitted from the text in order to avoid their leading examinees. This is because punctuation marks can lead examinees to the correct conjunctive choice. (See the full test in appendix 3.3)

5.7.1.1.6. Identification of conjunctions test

A text adopted from Alexander (1977) was modified to accommodate similar numbers of the conjunctive types. 16 conjunctive items were selected from Halliday and Hasan's (1976) taxonomy to function as cohesive devices contributing to the local and global coherence of the text. The task in this test was to identify the conjunctive and underline or circle it. The length of the test and the level of difficulty were not influential factors in this test. However, the text had only 310 words and it was of a narrative type which was easy to understand.

Conjunctions mentioned in this text were as follows: Four additive conjunctions were selected, *moreover, or, in addition*, and *luckily*; from the adversatives *nevertheless, however, yet*, and *still*; causals were *for this reason, so, consequently,* and *in such an event*; and from temporals *at this point, then, at the same time* and *afterwards* were chosen as shown in table 10. (Appendix 3.1 includes the full text used for conjunctive identification)

Table 10 Conjunctions to be identified in the conjunction identification test

Conjunctive type	*Additive*	*Adversative*	*Causal*	*Temporal*
Name of conjunction	Moreover Or In addition Luckily	Nevertheless However Yet Still	For this reason So Consequently In such an event	At this point Then At the same time Afterwards

It is worth mentioning here that this test was given to the participants and collected before the other two tests were distributed to make sure that the students were not affected by the conjunctions mentioned in the other tests.

5.7.1.1.7. Function recognition of conjunctions test

Halliday and Hasan's (1976) taxonomy of conjunctive items has four semantic functions: additive, adversative, causal and temporal. To assess whether the participants of the study were able to recognise these functions, a list of 36 conjunctions which signal these functions were given in a table and the students were asked to classify them according to their functions. To make the task easier, numbers were given to the four functions: additive (1), adversative (2), causal (3) and temporal (4). The students were instructed to classify the given conjunctions by writing a suitable number beside the conjunction. The examples were given below in table 11 illustrate how students were guided to answer this test. (The table which includes all the conjunctives given for classification is found in appendix 3.2)

Table 11 Classification of conjunctive types

And	1	Yet	2	So	3	Then	4
Therefore	?	Moreover	?	Next	?	Though	?
Additionally	?	Because	?	Nevertheless	?	To this end	?

5.7.1.1.8. Reading intervention materials

By reviewing the literature related to conjunctions and their effect on reading comprehension it has been found that the explicit teaching of conjunctions to English foreign language readers is vital for readers to be able to use them in their reading comprehension (Williams 1983, Chapman 1983, Cohen et al. 1988, Carrell 1988, Nunan 1999). Identifying conjunctions and recognising their functions are important for better reading comprehension. Based on this, the study participants in the treatment groups were taught conjunctions before their reading comprehension was tested.

Conjunctive devices as defined by Halliday and Hasan (1976) were the independent variable in this study which was carried out by the researcher in the Gharian and Sabrata English departments. In order to explicitly teach conjunctions and their impact on reading comprehension a special reading syllabus was prepared. The objectives and content of the syllabus, and the types of activity used in the programme are discussed in the next sections.

5.7.1.1.8.1. Objectives

The reading comprehension programme which was currently used in the English departments of Gharian and Sabrata had the major objective which was to train students to read with ease and with a satisfactory understanding any written text in a reasonable time (Nuttall 1996). This objective is the ultimate goal of any reading

comprehension programme. However, this general objective does not specify the mechanism by which it could be fulfilled. Such important practical means were left to the instructors.

By discussing this topic with the university professors I met during my visit to five English departments in Libya, I came to the conclusion that most lecturers were eclectic in the approaches they used in teaching reading comprehension. None of them, however, mentioned conjunctions as one of their teaching objectives.

Taking what was mentioned into consideration, it was decided to follow clear practical objectives focusing on conjunctions as the prime means of text understanding. Tyler (1949, p.3; cited in Toohey 2002, p.133), indicated that "if an educational programme is to be planned and if efforts for continued improvement are to be made, it is very necessary to have some conceptions of the goals that are being aimed at."

The main objectives of the reading intervention programme were as follows:

- Helping students to identify the form of conjunctions in order to distinguish them from other functional words such as prepositions.
- Teaching them how to recognise the function of conjunctions and the role they play in joining two independent sentences and sometimes paragraphs together.
- Encouraging students to recognise the semantic relations existing in a text and how conjunctions contribute to its coherence.
- Helping students to use conjunctions in making the semantic relations already present in the text explicit.
- Training students to distinguish conjunctions from other connectives and discourse markers.

- Teaching students to develop skills in using conjunctions in guessing new/difficult words.
- Training students to use conjunctions in predicting the meaning of text in general.
- Training students to distinguish between the local and global meaning of text and the role of conjunctions in this.
- Practising reading skills such as scanning and skimming with the assistance of conjunctions.
- Helping students in using conjunctions when summarising texts presented to them in the classroom.
- Training students to answer different types of reading comprehension questions, such as multiple-choice, cloze test and T/F questions.

These objectives were translated into activities as discussed below.

5.7.1.1.8.2. Content

The selection of suitable texts to be used in any reading course is attributed can be determined by many factors. Among these are the social environment, the interests of students and the time allocated to this programme. Given that 85 per cent of the participants who attended the intervention programmes in Gharian and Sabrata were female students living in a conservative Muslim society, the texts were selected which were appropriate to the values and ethics of these people.

In addition, the topics were chosen to be of interest to the students so that they would enjoy them and attend the programme to the end. For example, topics such as car racing and football were not deemed suitable for the study's female participants, whereas topics related to food and bringing up children were highly appreciated by them.

Finally, the time allocated to the programme was limited to only 2 hours per week. This meant that the lesson plans should be concise and condensed to guarantee the maximum benefit.

All in all, eight texts were selected from Mosback and Mosback (1976), Cobb (1974), and Salimbene and Widdoson (1986) to be taught in 12 weeks. Their length varied from 400 to 650 words and their level of difficulty is graded from intermediate to advanced, with the latter left to the last sessions.

These texts were supplemented with many activities designed to achieve the aim of the programme. A table containing the types of conjunctions as classified by Halliday and Hasan (1976) was also attached to the bound texts. All students received a copy of the syllabus free of charge. (See appendix 5.5 for Halliday and Hasan's (1976) table of taxonomy of conjunctions)

5.7.1.1.8.3. Activity

All types of activity were designed on the basis that students were the focus of the activity. The students were encouraged to work in pairs or groups and practice all activities together in order to benefit from them. The role of the instructor (i.e. the researcher) was limited to guiding the class, eliminating outside distraction and controlling the transition from one activity to another to save time.

The first activity began with writing the title of the passage on the blackboard and asking the students to write down their prediction of the topic in a few lines in groups. Their feedback was written on the blackboard in the form of outlines. These points were checked one by one when reading the text started. Students could be asked about their individual background related to the topic, for example, connecting information they knew about "dreams".

In the next activity, the students were asked to skim the text searching for specific information such as names or a date and to scan it quickly to see whether the points written on the blackboard were found in the text. New ideas could be added and irrelevant ones were deleted.

After that students were asked to underline all connective items mentioned in the text. Their positions were checked and the difference between inter-sentential connectives and intra-sentential ones was highlighted. This led gradually to the distinction between normal logical connectives and conjunctions.

Again, students were instructed to underline the sentences which were joined by connectives. Verification was practised of whether these joined sentences were compound, complex or independent from each other. This is what distinguishes conjunctions from logical connectives.

Once able to distinguish conjunctions from other connectives, the students were asked to classify them according to their functions: whether they are additive, adversative, causal or temporal.

The next step was asking students to read the text silently. In this task, the time taken was calculated and any difficult vocabulary should be underlined. Difficult lexical items were checked and their meanings in English were searched for either by guessing or by consulting a dictionary. In all cases, confirmation of the correct meaning was the role of the instructor, since misunderstandings could always arise.

To be sure that the students understood the text, comprehension questions were prepared either by the teacher or by the students themselves. These questions could take the form of Yes/No questions, F/T questions, multiple-choice questions or in the form of rational cloze test. The students answered the questions individually first and after that they answered them in pairs or groups.

The last step was asking the students to complete a few sentences constructed on purpose to train them in how to complete sentences by using conjunctions as cue. To facilitate the task compound and complex sentences were given and one part was omitted. The students were free to fill the space with any sentence which was compatible with the semantic relation type of the connective or the conjunction given.

For homework, the students were asked to summarise the given text by using the conjunctions they had learned in constructing their coherent written summary. (An example exercise is found in appendix 5.1)

In summary, the reading intervention programme was prepared with the assistance of the questionnaire findings and with the cooperation of the reading comprehension course teacher in the Gharian and Sabrata English Departments. Treatment groups in both English departments were explicitly taught the reading intervention programme which included conjunctions and their relationship to reading comprehension. The programme lasted for 12 weeks.

As has been indicated above, the design of the intervention reading programme was based on the findings of the attitudinal questionnaire, which is the topic of discussion.

5.7.2. Questionnaire

A questionnaire is a written list of questions to be answered by a group of people in order to solicit their opinions, attitudes, or beliefs about certain topic(s) or person(s). Smith (1991, p.249) defines it as "a self administered interview", where a respondent voluntarily expresses him/herself with the intention of contributing to a certain research work.

As a part of these research data collection methods, a questionnaire or a "self-completion questionnaire" as Bryman (2001) calls it, was chosen as a preliminary instrument to gather some information relating to the attitude of fourth year English department students learning English as a foreign language towards conjunctions and their impact on reading comprehension.

Descriptive data were needed to help the researcher in understanding and designing the intervention reading syllabus which was used in the study and to provide information that could be used in later comparisons. The findings of the questionnaire also offered a clear picture of the respondents' attitudes towards reading comprehension and the means they used to tackle written texts. Conjunctions as important signposts guiding readers to a fast and satisfactory understanding of texts were the focus of the questionnaire items. Thus, the questionnaire had the following objectives:

- Discovering the level of knowledge the study respondents had about conjunctions.
- Understanding whether the respondents were able to identify conjunctions and recognise their function.
- Observing the confidence the respondents had about using conjunctions in reading comprehension, speaking and writing.
- Exploring the respondents' attitudes towards their current syllabus and the activities they had experienced in the classroom in relation to conjunctions and their role in reading comprehension.

These objectives were translated into 17 concise items and prepared in a clear and attractive way to guarantee a high response rate.

Although the items of this questionnaire did not gather information related to the private lives of the respondents or any sensitive issues, the researcher gained the approval of the head of the targeted English departments for conducting the questionnaire and gave the respondents the option to bring back the questionnaire uncompleted if they did not wish to participate in the study. All the students, however, expressed their happiness to complete the questionnaire and offered more assistance if needed.

5.7.2.1. Questionnaire respondents

The questionnaire was completed by about 200 fourth year English department students studying English as a foreign language in five Libyan state universities: 50 respondents from Seventh April University, 40 from Aljfara University, 30 from Gharian University, 40 from Aljabal Algarbi University, and 40 from Alwatheeka Alkhadra/ Sabrata University.

The average age of the respondents was about 22 years old and 90 per cent of them were female students. This is because most of the students who join English departments in Libyan universities are females due to social and practical circumstances. Teaching is a socially acceptable profession in Libya for women and working in the nearest school to the residence of the female teacher is almost guaranteed. Average ages and the percentage of male and female respondents are shown in the tables 12 and 13 below.

Table 12 Age of the questionnaire respondents

	No	*Minimum*	*Maximum*	*Mean*	*Std Deviation*
Age	200	20.00	25.00	21.86	1.03
Valid No.	200				

Table 13 Gender of questionnaire respondents

	Gender	*Frequency*	*Percentage*
Valid	Male	20	10.0
	Female	180	90.0
No.	Total	200	100.0

5.7.2.2. Questionnaire design

Most of the items selected for this questionnaire adopted Likert style scales since as Borg and Gall (1979, p.299) stress "Likert scales are probably the most common types of attitude scale constructed." In addition, when the sample is large a Likert scale is appropriate for a statistical computer software analysis.

Open questions were not used because respondents' ability to write in English was limited and, as Bryman (2001) highlights, even if they were allowed to use their first language (i.e. Arabic) most respondents preferred not to write.

The language used in the questionnaire items was carefully chosen to be simple and clear. The items were prepared to be straightforward, short and concise to avoid boredom, fatigue and misunderstanding.

The format of the questionnaire was designed to be as attractive as possible. A variety of print styles was used. All items were written in bold. The examples given were written in italics and double space was left between lines.

The questionnaire items were sequenced from general to specific as follows:

- The first two items asked respondents about their reading in English background and the reading materials they preferred most. This was to check their interest in English written materials which could reflect their English reading efficiency.
- The third item presented some reading strategies including using conjunctions in reading comprehension. The aim behind this item was to check how far

respondents could use conjunctions in reading comprehension among other reading strategies. (Full questionnaire items are found in appendix 2.1)

- Item number four was about the facilitative role of conjunctions in reading comprehension. This question was merely an attitudinal one since only by experimentation could the facilitative role of conjunctions in reading comprehension be tested. However, at this stage of the study a positive attitude was important.
- The identification, recognition and use of conjunctions in reading comprehension were the topics of items five, six, seven, eight, and nine.
- Questionnaire items number ten and eleven evaluated the confidence of respondents in using conjunctions in speaking and writing.
- The difficulty of conjunctive types was presented in items twelve, thirteen, fourteen, and fifteen.
- Finally, the current syllabus and the tasks related to conjunctions and their role in reading comprehension were targeted by the last items, sixteen and seventeen.

5.7.2.3. Piloting

The items used in the questionnaire were piloted before they were presented to the study respondents. Twelve fresh university graduates working as English teachers in three neighbouring secondary schools in Libyan volunteered to complete the questionnaire and the test prepared for the intervention programmes. Three criteria were considered in this study: the wording of questionnaire items, their clarity, simplicity and the time needed to complete the questionnaire.

The findings of the pilot study suggested that a few questionnaire items had to be rewritten and illustrative examples were needed, especially when respondents were asked to distinguish between conjunctive types. As the pilot study findings suggested,

a few examples were added to illustrate each individual type of conjunction in items 12, 13, 14, and 15. The average time calculated was 20 minutes.

To strengthen the validity of the questionnaire, the researcher attended all the completion sessions of the questionnaire in all universities. Questions raised by respondents regarding a few difficult words or items were explained carefully in English and sometimes in Arabic to save time and guarantee full understanding. Throughout the duration of questionnaire completion the researcher avoided giving any leading answers, since that could affect the validity of the responses.

It was clear that the respondents took their contribution seriously. This was shown by the questions they asked and the time they took to complete the questionnaire. All of them voluntarily wrote their full names on the questionnaire forms. This helped the researcher to distinguish males from females if they forgot to thick male or female squares.

Finally, during the questionnaire collection the researcher checked carefully all the copies of the questionnaire handed to him to be sure that all items were answered. This was to minimise missing data, a common phenomenon linked to self-completion questionnaires.

In summary, the findings of the questionnaire were used by the researchers to prepare the reading programme materials which were taught to the treatment groups of the intervention programmes in the Gharian and Sabrata English departments

5.7.3. Interview

An interview was used to offer data necessary for complementing the intervention programme collected data. After the students had completed their post-

test, treatment group participants were asked to attend an interview session to justify their post-test answers without any change in the written data they had already given.

A semi-structured interview was designed to explore the means the participants used in answering the post-test questions and to evaluate the level of difficulty of the test. Furthermore, the researcher wanted to know whether the reading strategies related to conjunctions the students learned by attending the reading intervention programme were applied successfully in the test, or if other reading strategies were used instead.

An interview is defined by Smith (1991, p.267) as "a special form of conversation in which one person attempts to extract information, opinions, or beliefs from another". It is considered by Kvale (1996; paraphrased in Cohen et al. 2000, p.267) as a remarkable move "from seeing subjects as simply manipulable and data as somehow external to individuals... towards regarding knowledge as generated between humans, often through conversation."

The researcher prepared a number of questions to collect further information from the participants of the treatment group relating to their performance in the post-test. Much attention was paid to ensure that the interview questions were well constructed to gather the appropriate information in the minimum time.

5.7.3.1. Types of interview

Regardless of the labels given to the types of interview, there are three main categories:

a. A number of questions are carefully prepared and presented in the same sequence to all respondents and respondents' answers are received on a standard fixed schedule. This type of interview is called either a highly structured or formal interview (Smith 1991; Cohen et al. 2000).

b. The interviewer prepares her/his questions in advance; however, when presenting them they can change the order, the wording and explain words or questions if needed to facilitate respondents' understanding. This is what methodologists call a semi-structured or less informal interview and this is the type of interview adopted in this study.

c. The interviewer has a number of topics either as outlines written on a piece of paper or in her/his mind. These topics are presented in a dialogue form away from formality. In such a situation the researcher usually lacks enough information about the topic under investigation which means that any information elicited from the interviewee could be useful. Informal or open-ended unstructured interview are the labels given to this interview type.

Many other interview types are suggested by Le Compte and Pressele (1993; cited in Cohen at al. 2000) such as: standardised interviews; elite interviews; ethnographic interviews; life history interviews; and focus groups.

The semi-structured interview with the definition mentioned above was the type used in this study. As Borg and Gall (1979, p.312) recommend "in educational research [the interviewer] usually includes some highly structured questions in their interview guide, but then...aims toward a semistructured level." This is because of the following reasons:

a. Respondents answer the same prepared questions regardless of the sequence of their presentation or exact wording.

b. There is flexibility in the way questions are presented in that any explanation or clarification needed could be provided by the interviewer.

c. Using the native language could be needed by both the interviewer and interviewee to save time and effort.

d. Respondents can inquire about any difficult questions or words or even add more information than the interview questions intended to collect.

e. The data obtained are easy to quantify in comparison with open-ended interview.

f. As a direct interaction, the semi-structured interview has space for building up a warm relationship between the interviewer and the respondent which could contribute to the ease of gathering the needed information.

In general, it can be argued that the semi-structured interview "is highly objective while still permitting a more thorough understanding of the respondents' opinions and the reasons behind them" (Borg and Gall 1979, p.313).

The reasons for choosing the semi-structured interview mentioned above as a method of collecting data in this study were actually related to the advantages of this interview type. Yet, it has to be recognised that limitations to this type also exist. Cohen et al. (2000) argue that flexibility in changing the sequence and sometimes the wording of the questions could lead to different responses which may affect the validity of this method.

At this point it might be useful to remind the reader that in this study the main topic of the interview questions was conjunctions and their impact on reading comprehension. All questions were prepared to examine certain factual grammatical points such as types of conjunctions and their function in the text. These questions are not affected by changes of wording or asking questions in different styles. For example, questions such as what is the grammatical category of conjunctions? and are conjunctions adverbs or nouns? have the same answer regardless of their different wordings.

5.7.3.2. Interview limitations

Every interview type has its limitations. Beside the problems related to the semi-structured type mentioned above, other interview types have the following major limitations:

1. Formal interviews lack flexibility to deal with individual circumstances. This characteristic impedes the natural interaction between the interviewer and the respondent and deprives the latter from the possibility of adding more useful information. However, this interview type could be useful "when the interviewer knows what he or she does not know and can therefore frame appropriate questions to find it out" (Lincoln and Guba 1985, p.269).

2. Open-ended or informal interviews have no fixed list of questions presented to all respondents in the same wording and style. This means that different interviewees could be asked different questions and important questions could be forgotten. As a consequence, the organisation and analysis of data collected by this type of interview are undoubtedly difficult. Unstructured interview can only be useful when the researcher does not have a clear picture about the topic of the interview. In this case any information offered by the respondent could be useful.

All in all, as a direct human interaction the interview can have both advantages and disadvantages (Borg and Gall 1979). It is the duty of the researcher to minimise the limitations of the interview type adopted for maximising its validity.

5.7.3.3.

Participants who were assigned randomly to the treatment groups, but not to the comparative groups, in both the Gharian and Sabrata English Departments were the respondents of this interview. According to the research design, these students

were required to be interviewed after they finished the post-test to justify their answers.

All of the interview respondents were students studying English in their fourth year of the English Departments. 80 per cent of them were female students and their average age was 22. More details about their educational background can be found in section 5.5 above.

The plan was to interview 50 students; only however, 37 agreed to be interviewed, 14 from the Gharian treatment group and 23 from the Sabrata treatment group. The reluctance of some of the female students to be interviewed was because the interview was audio recorded. Shyness and the limited time available were other reasons given; nevertheless, the number of the respondents interviewed was considered satisfactory.

5.7.3.4. Interview questions

A list of questions was prepared to collect data justifying the performance of the participants in the post-test of the experiments organised in the Gharian and Sabrata English Departments. The questions were constructed to evaluate how deeply an understanding of conjunctions was reflected in the participants' post-test answers.

The main focus of the questions was to provide data relating to how respondents "describe the relationship that existed between the items of information that were being connected" (Goldman and Murray 1992, p.508). Many other questions relating to conjunctions and their impact on reading comprehension were included. Some of the questions are summarised as follows.

The first question asked the respondents about the difficulty of the test. This was to check the validity of the post-test instruments. The second question was about how far the respondents comprehended the reading text used for the test. Other

questions were concerned with students' justifications of their conjunctive item choices. A sample of each conjunctive type was selected for justification. For example, *and* as an example of the additive type, *but* of adversative, *so* for causal, and *then* as a representative of the temporal conjunctive type. (The list of the semi-structured interview questions is found in appendix 4.1)

All questions were framed in simple language to ensure that the flow of interaction occurred smoothly and with full understanding between the interviewer and the respondents. The smoothness of the interaction was supported by the audio recordings of the interviews.

5.7.3.5. Interview recording

To preserve the data collected in interviews, note taking, or tape recording are the usual methods used by researchers, (Borg and Gall 1979). As with any other methods, both have their advantages and limitations. Because of this, when choosing between those methods many basic influential factors have to be considered. Factors related to data preservation, the reactions of respondents and the practicality of interview administration are some of these.

After assessing both methods carefully, tape recording was chosen despite the cost. A Sony tape recorder was bought together with a number of good quality tapes to be used in the interview. This method was favoured over note taking for the following reasons:

1. It guaranteed that all data were recorded and had an equal chance to be checked later and included in the analysis. In note taking methods the researcher could be biased in jotting down data during interview sessions.
2. The flow of interaction continued smoothly to the end of the interview. There was no interruption or distraction due to note taking.

3. It was easy for the researcher to confirm the information collected by using tape recoding. That could be done by asking the respondent to listen to the recorded dialogue and correct any misunderstanding. In note taking, it is sometimes difficult to read what the interviewer has jotted down in haste.

4. When analysing data the researcher can rewind the tape many times and listen again to the recorded data to clarify or confirm any information. In addition, any other person can easily evaluate the data and classify the response (Borg and Gall 1979).

5. Tape recording saves the time of both the interviewer and the respondent. A lot of time is wasted when using note taking.

The major limitation mentioned in the literature in relation to tape recording interviews is that respondents may hesitate or even hide personal information useful to the study when s/he recognises that s/he is being tape recorded. This limitation does not concern us here since the information the researcher collected was not personal. It was semantic and grammatical information related to conjunctions and their impact on reading comprehension.

Concerning ethical issues, permission was obtained from the head of the English departments in Gharian and Sabrata. The students were also informed that their interview would be tape recorded. Most of them happily offered their consent even though a few female students felt uneasy about that. However, after the researcher explained the nature of the interview and encouraged them to participate most of them accepted to be tape recorded, especially when they knew that their lecturer (i.e. the researcher) was the interviewer.

The place where the interviews took place was carefully chosen. An air conditioned office located away from sources of noise was borrowed from one of the department employees to be the site of the interview sessions. A female employee

from the department was asked to attend the interview sessions, since most of the respondents were female. Her attendance was necessary since in Libyan Muslim society it is not acceptable for most of opposite sexes to be alone behind closed doors. However, her attendance had no effect on the respondents' performance because she did not understand English, the language of the interview, and she was busy silent doing office work.

Finally, the data collected were transcribed, and an important part of it was coded and quantified to be analysed statistically using the SPSS computer software programme. Other parts of the data were analysed qualitatively.

5.8. Validity and reliability

Any piece of research, whether it is qualitative or quantitative has to consider certain characteristics at all research stages in order for it to be valid and reliable. All types of research should consider validity and reliability in designing, processing, and in analysing data in order to be acceptable in the natural and social sciences. Both reliability and validity will be discussed below with reference to the research work in hand.

5.8.1. Reliability

Since Oppenheim (1992, p.159) stresses that "adequate reliability is a precondition to validity", beginning the discussion with reliability in relation to our thesis is paramount. This is in line with Cohen et al. (2000, p.105), who highlight that "reliability is a necessary precondition of validity."

Nunan (1992, p.14) defines reliability as the consistency and replicability of research and he divides it into external and internal reliability. "Internal reliability

refers to the consistency of data collection procedures, analysis, and interpretation. External reliability refers to the extent to which independent researchers can reproduce a study and obtain results similar to those obtained in the original study."

Reflecting what is indicated above in terms of the current study it can be said that the independent and dependent variables investigated in the study (i.e. conjunctions and reading comprehension) were clearly defined as mentioned by Halliday and Hasan (1976). Beside this the data collection methods used and the research procedure were carefully explained. This is important for replication. However, as Oppenheim (1992, p.159) argues, "reliability, or self-consistency, is never perfect; it is always a matter of degree."

The study participants' number, gender, age, educational background, and how they were assigned to the treatment and comparative groups have been clearly stated in a separate section of this chapter.

Every effort was made to maximise the reliability of the testing instruments. As Alebsi (2002, p.142) indicates, "reliability implies that the tests would yield similar results on replication with the same respondents." That was clear enough when comparing the results of the pre-test of the comparative group with their post test results. Both results were highly reliable, with a Cronbach alpha coefficient reported of 0.79. This high reliability came as a result of checking the measuring instruments with three PhD native speaker students and their review by five PhD foreign language students before they were piloted with twelve fresh university graduates. Characteristics such as clarity of questions, ambiguity of instructions, length of questions and wording were carefully considered before starting the data collection procedure.

The piloting criteria mentioned above were applied to the questionnaire questions. As an attitudinal questionnaire most of the items took the form of Likert scales, as Borg and Gall (1979) recommend. They were clearly stated to guarantee questionnaire completion by the study respondents.

In addition, the questionnaire respondents honestly completed all the questionnaire items when the researcher assured them that their responses would not affect their academic progress, and the results of the questionnaire would guide the design of the reading programme which some of them (i.e. the treatment groups) would benefit from.

For strengthening the reliability of the questionnaire, the researcher attended all the questionnaire completion sessions. His presence helped in answering the respondents' inquiries and in ensuring that all questionnaire items were completed. He personally the completed questionnaire forms to minimise missing data.

Interview reliability was achieved by asking all the respondents the same questions and by giving them the same chance to express their justification. All questions were prepared in advance; however, more clarification and illustration were offered from time to time to save time and guarantee full understanding.

This contradicts the view of Silverman (1993; cited in Cohen et al. 2000, p.121), who argues that for an interview to be reliable all questions should be highly structured "with the same format and sequence of words and questions for each respondent". These characteristics are related to interviews adopted in social science research in general.

In our situation all questions were prepared to gather information concerning conjunctions and their relation to reading comprehension. In other words, the meaning of the questions was not affected by changes of wording or in the sequence of

questions. No sensitive or personal questions were included. All questions were presented in the same context and emphasis to avoid leading the respondents toward certain answers.

5.8.2. Validity

Oppenheim (1992, p.160) explains that "validity indicates the degree to which an instrument measures what it is supposed or intended to measure." In other words, "validity refers to the issue of whether an indicator (or set of indicators) that is devised to gauge a concept really measures that concept" Bryman (2001, p.71).

Perfect research that obeys all validity and reliability criteria is practically impossible to achieve. Gronlund (1976, p.81) argues that validity should be considered as a matter of degree rather than as an absolute state. Furthermore, a research work could be reliable but not valid. As Gronlund (1976, p.80) reported, "reliability is a necessary but not a sufficient condition to validity."

Validity itself has many types. Cohen et al. (2000) divide validity into internal and external. The former "seeks to demonstrate that the explanation of particular event, issue or set of data which a piece of research provides can actually be sustained by the data" (ibid. p.107).The latter "refers to the degree to which the results can be generalised to the wider population, cases or situation" (ibid. p.109).

In qualitative research, validity could be expressed by the honesty of the researcher in collecting her/his research data and by a thorough covering of the topic under investigation. Quantitative studies can maximise validity by selecting the appropriate samples, consistent measuring instruments, and using the correct statistical operations when analysing data (Cohen et al. 2000).

All possible precautions were taken for the work in hand to maximise both internal and external validity by minimising the impacts of the threats mentioned by

Campbell and Stanley (1972) on experimentation, the major method of collecting data in this research.

5.8.2.1. Internal threats to the validity of experiment

To achieve high internal validity Campbell and Stanley (1972) recommend that educational researchers adopting experimentation as their method of investigation should be aware of eight extraneous variables. These interfering threats include history, maturity, testing, instrumentation, regression, selection, mortality, and the interaction of selection and maturation.

Maturation means the effect of time on the participants in the intervention groups. That may include their physical and mental development. This development could occur between pre and post-tests and force itself as an influenced variable besides the identified independent variable, thus causing invalid results.

For the current study, the participants of the treatment groups spent only 12 weeks attending the intervention reading programme between the pre-test and the post-test. This interval was not long enough for the participants to undergo significant physical and mental development. Therefore, there is no worry of any impact of maturation on the outcome of the post-test results rather than the effect of the independent variable.

In addition, any boredom and fatigue were excluded since the reading intervention programme was scheduled to take place only once a week from 9 to 11 a.m. and classroom activities were designed to involve all students.

The second threat, which concerns us here, is the effect of the pre-test on the results of the post-test. It is claimed that participants perform better when they have the same test for the second time. To reduce the effect of this threat and to distract the participants from remembering the items of the pre-test after they left the classroom,

they were informed that one objective of the pre-test was to assess their English reading skills. That would help the researcher to design a suitable reading programme, which they would benefit from. This was emphasised to the participants that the result of the test had nothing to do with their progressive evaluation. The other aim was to have objective criteria for assigning them equally to the intervention groups.

Students might be expected to check their answers later if they thought that the test questions could be repeated in the future. Another major precaution was taken by organising another post-test only experiment with other participants and in another English department.

The third threat is related to the measuring instrument, which Campbell and Stanley (1972) call instrumentation or "instrument decay". They argue that if the instrument of the pre-test differs from that of the post-test, or if the scoring system varies from one test to another, the validity of the experiment could be in danger. With this threat in mind the researcher administered the same measuring instrument in both tests. One advantage of the instrument chosen (i.e. the multiple-choice rational cloze test) was the possibility of the objective scoring of all its items. Furthermore, the instruments were carefully revised by seven PhD colleague students, both native and foreign English language speakers, and finally checked by the research supervisor. Thus, the participants had an easy job to do; they either underlined the correct option or made a mistake. Biased judgment or misunderstanding by the corrector was excluded because of the consensus on the correct answers of its components.

Also, all the participants who attended the pre-test came to the post-tests in the Gharian intervention programme, which excluded the threat of mortality. Table 14 below summarises the discussion above.

Table 14 Sources of invalidity in the experiments used in the study

Threats	Pre and post-test intervention	Post-test only intervention
History	√	√
Maturation	√	√
Testing	?	√
Instrumentation	√	√
Mortality	√	√

The place and time of tests' administration were carefully chosen to be similar in both tests. The same rooms used for the pre-test were chosen to be the place for the post-test, and nine o'clock in the morning was the time fixed for both tests.

Finally, to strengthen the internal validity of the experiments, the post-test was followed by a semi-structured interview to obtain more qualitative clarifying data complementing the quantitative data collected from the pre and post-tests. This is in agreement with the recommendation of Nunan (1992, p.47), who states that internal validity could be strengthened by "supplementing the quantitative data with qualitative data, such as follow-up interview data".

5.8.2.2. External threats to the validity of the experiment

Campbell and Stanley (1972) list three extraneous variables which could jeopardise the external validity of research work adopting experimentation as the data collection method. These threats are the interaction effect of testing, the interaction effects of selection, and reactive effects of the experimental arrangements. These harmful variables, if not properly controlled, could make the sample of the intervention groups unrepresentative of the population they were drawn from. This, consequently, limits the generalisability of the research findings.

To reduce the unwanted impacts of these interfering variables the researcher considered the following precautions.

- Administering the pre-test in a normal educational setting with no specific noticeable preparations. This precaution was taken to give the impression that a routine test was organised for the sake of dividing the target students into two similar groups.
- The study participants were not asked to prepare for the pre-test. Their assessment depended on the background they had in the topic under investigation.
- Two interventions in two places were organised. One with pre-post testing was organised in Gharian English Department and the other with only post-testing in Sabrata English Department. This is to avoid the possible negative effect of pre-testing, which could warm up the pre-tested groups and differentiate them from the un-pre-tested sample.

Regarding the interaction of testing and the intervention reading programme threat, it can be said that testing is a normal phenomenon in educational settings which means that pre and post-testing of the study groups is not something specific to them. Other groups in situations similar to theirs also have tests regularly. As Campbell and Stanley (1972, p.18) indicate, "in research on teaching, one is interested in generalising to a setting in which testing is a regular phenomenon."

The English departments chosen for organising the experiments do not differ from other English departments in other Libyan universities. They were selected only because they were closer to the researcher's residence. However, it has to be mentioned here that the researcher was one of the former teaching staff of the Gharian English Department. That, of course, facilitated access to the department students and premises, but that did not make these students unique, which excludes any selection bias. Other universities were not approached by the researcher because of the remote

location. Nevertheless, if they had been approached, there was little doubt that they would have been cooperated.

To reduce the impact of the reactive arrangements threat, pre-testing was presented in a regular educational setting, and assigning participants to the intervention groups was explained as a routine action to ease crowding. This does not exclude the possibility that the students knew that the researcher would teach only the treatment group (i.e. the lucky group as they saw it).

With the only post-test intervention programme, students were assigned randomly to the comparative and treatment groups without their knowledge. No pre-test was administered to alert them to any specific coming procedures.

The intervention reading programme was presented as a regular syllabus involved in their academic progress. That also helped in minimising the absenteeism from the programme.

One source of invalidity could not be avoided. The participants knew that they were engaged in an intervention programme because the researcher himself taught the intervention reading programme. Such a piece of information was conveyed to the students for ethical reasons, though Campbell and Stanley (1972, p. 21) recommend that "in much research in teaching methods there is no need for the students to know that an experiment is going on".

In practice, that one is trying a method can be hidden from students, but to hide the teaching of a reading programme is not possible. The study participants had written materials in hand which they could compare with the reading materials of the comparative group even though they were told not to do so.

5.8.2.3. Content validity

This type of validity is concerned with the content of the measuring instruments. It is defined by Borg and Gall (1979, p.212) as, "the degree to which the sample of test items represents the content that the test is designed to measure". It differs from face validity in that the latter is concerned with the subjective judgments about the relationship of the test with the topic under investigation.

In this study the measuring instrument of the dependent variable (i.e. reading comprehension) was a modified rational cloze test. McKenna and Layton (1990; cited in Goldman and Murray 1992) stressed the sensitivity of the rational cloze test to inter-sentential integration. This measuring instrument was modified to include a multiple-choice testing procedure. This development of the rational cloze test facilitated the examinee's task by supplying for each rational cloze gaps three options from the same language category (i.e. conjunctions). All the participants had to do was to circle or underline the correct option. No productive activity was required. There was nothing to write which could cause confusion or lower the objectivity of scoring.

The selection of conjunctions was carefully balanced to include five conjunctive items from each conjunctive type. Their level of difficulty was also considered in that the selection included both more frequently and less frequently encountered conjunctions.

In addition, the topic of the text selected for the reading comprehension test was culturally neutral. It was not related to any religion, race or any ethnic individual values. It was about the food canning process, an industry found everywhere.

5.8.2.4. Validity of the questionnaire

An attitudinal questionnaire was used in this study to provide data for designing the intervention reading programme applied in this research. The questionnaire items were carefully constructed to achieve the questionnaire objectives. Different types of items were used with a specific focus on Likert scales because these are highly appreciated by methodologists. For example, Oppenheim (1992, p.200) describes it as a reliable scale. He stresses that "reliability of Likert scales tends to be good and, partly because of the greater range of answers permitted to respondents, is often higher than that of corresponding Thurston scales".

All questionnaire items were printed in bold in double line spacing and divided into categories under related sub-titles to ensure smooth reading of the questions right to the end. Respondents had already been briefed about the purpose of the questionnaire, and encouraged to complete all its items in a short message located at the top of the first page.

The questionnaire was completed by 200 students from five Libyan universities. This sample was drawn from a population of about 325 fourth year English department students. It was not possible, however, to use pure random sampling due to practical difficulties related to the locations of the universities as mentioned in the sampling section. The questionnaire was completed by fourth year students studying English in five universities.

The questionnaire had been piloted before it took its final form. Minor amendments were done to the wording and a few examples were added to illustrate some of the question items. Time was calculated, even though it was not an important variable in the questionnaire. Still, time estimation was needed when fixing the

schedule for administering the questionnaire. It took an average of twenty minutes to complete.

Questionnaire forms were distributed in the presence of the researcher. This achieved many goals:

- Response rates were maximised to almost hundred per cent.
- All questions regarding difficult words or ambiguous instructions were answered by the researcher.
- The researcher checked all completed questionnaire copies when they were handed to him to minimise missing data.
- The presence of the researcher encouraged the respondents to complete the questionnaire.

The work was achieved with the sincere cooperation of the heads of the English departments the researcher visited. Their encouragement to their students to honestly complete the questionnaire was very much appreciated.

5.8.2.5. Validity of the semi-structured interview

A semi-structured interview was chosen to collect data needed for strengthening the validity of the intervention programmes applied in this study. Its prime purpose was to solicit the treatment group participants' justifications for their post-test answers. Its flexibility was the main reason behind adopting it as a supplementary data collection method.

However, flexibility was not favoured at the expense of validity. All possible precautions were taken to maximise validity as follows:

- The interview questions were carefully constructed to be clear, concise, and short to guarantee full understanding and to save time.

- The same questions were repeated to all respondents. However, more explanation were sometimes added when respondents hesitated or confused.
- The questions were presented in the same order. Still, some questions had to be skipped when enough time was given to the respondents but no answer was given.
- Every respondent was given the same amount of time to answer the questions.
- Permission was given to use L1, but this was kept to the minimum. In many cases using L1 saves time and confirms understanding.
- Prompting could not be avoided but it was used wisely in that it did not lead the respondent to the correct answer, but merely to activate his/her memory process.

Tape recording of the interview did not decrease validity even though the majority of the respondents were female students. This was because of the following reasons:

- The respondents were assured that the recorded materials would not be used by anybody other than the researcher and would be destroyed after the research work ended.
- Their names were not mentioned during the interview sessions. Instead, the researcher called them by numbers given to them before the interview started.
- Being interviewed by a researcher who was also the lecturer who had taught them the reading comprehension course for three months gave them the confidence to express themselves without any hesitation or shyness.
- Distraction and interruption were kept to a minimum. This was achieved by choosing a calm place located far from sources of noise and turning off all communication and electronic instruments.

- The close relationship of the researcher with the respondents contributed to offering a suitable atmosphere for running the interview, and engaging actively in the interview interaction regardless of the tape recording.

All the steps mentioned were taken in order to maximise validity, and to facilitate the coding and analysis of data. Ethical principles in relation to this study were carefully considered. These principles are the topic of discussion in the next section.

5.9. Ethical issues

Educational researchers have ethical obligations towards their participants, customers, the scientific community, and to the society the researcher lives in (Dockrell 1988).

On the other hand, any academic researcher engaged in research work has objectives to achieve and in order to do so certain procedures have to be followed as a part of a reliable and valid piece of work. However, in many cases ethical constraints face researchers and delay or even force them to change the investigated topic altogether.

As a compromise, successful researchers are recommended to " strike a balance between the demand based on them as professional scientists in pursuit of truth, and their subjects' rights and values potentially threatened by the researcher" (Cohen et al. 2000, p.49).

In principle, the consent of the target educational institutions has to be guaranteed at the initial stages of any study. In our situation, two letters of permission were obtained from the Gharian and Sabrata English Departments. A written approval was necessary since these departments witnessed the administration of the research intervention programmes, which took about three months to complete. Only verbal

approval, however, was received from other English departments that witnessed the completion of the attitudinal questionnaire.

After access to the targeted students, thorough explanations of the research objectives and procedures were given to them. As Dockrell (1988, p.181) recommends, the researcher should not "minimize or indeed exaggerate the demands that are to be made in terms of time, effort, or stress on subjects".

Certain details were concealed for the sake of the reliability and validity of the research. For example, the actual aim of the pre-test and the purpose behind dividing them into two groups were not clearly stated to the study participants. Apart from that, the participants were assured that participation in the study was optional and quitting was allowed at any stage of the research. The researcher promised the participants of the intervention programmes not to use the data they offered in any way rather than the research work they accepted to participate in. They were also promised to be informed about the research findings when the research completed by dedicating a copy of the completed thesis to the Gharian and Sabrata English Departments' libraries.

By understanding this, all students accepted to participate in the study and offered their full cooperation with the researcher. They were happy to contribute to the study since, as they believed, such a contribution could benefit other students in the future.

This is in congruence with Cohen et al.'s (2000, p.50) emphasis that "the benefit to participants could take the form of satisfaction in having made a contribution to science and a greater personal understanding of the research area under scrutiny."

The measuring instruments, including the pre and post-tests, were carefully constructed to be compatible with their English language proficiency to avoid any extra stress. Question items were not very demanding. For instance, the participants had nothing to write, all they needed to do was to underline the correct answers. No productive activity was needed.

The text chosen for the reading comprehension test was of an expository type. Sensitive topics related to religion, culture or other values were avoided to exclude any negative reactions.

In the semi-structured interviews, all respondents agreed to be tape recorded after numbers were given to them as replacements for their real names. Throughout the interview sessions the respondents were called by numbers instead of their actual names.

In addition, the researcher assured the respondents that the recorded materials would be destroyed when the research ended. All these precautions were taken because about 85 per cent of the interview respondents were female students who did not want their names to be mentioned. Some of them even asked for my assurance that others would not be allowed to hear their voices.

Another socially and religiously necessary precaution was taken. The researcher asked the head of the English departments concerned to instruct a female employee to attend the interview sessions which involved female students. This was necessary since the door of the room chosen for the interview would be closed to minimise noise and interruption. In Libyan society it is not acceptable for members of the opposite sex to be alone behind closed doors.

Finally, the researcher thanked all English department administrators including their heads. They were promised citation in the acknowledgement section of the study.

5.10. Summary

This chapter is concerned with the practical aspects of the study. It started by defining the problem of the research and presented the methodology used to collect its data. Both quantitative and qualitative data collection methods were used in collecting data needed for this study.

The participants of the study were identified. Their English backgrounds beside the characteristics they share were clearly presented. This was followed by explaining the procedure used to choose the sample and assign them to the experimental groups.

Experimentation was the major method used to collect quantitative data. Two intervention programmes were organised in two English departments to minimise the possible limitations of the application of a single experiment. This was complemented by a questionnaire completed by the target sample of the study to collect data needed for designing the reading intervention programme.

The qualitative data were collected by using a semi-structured interview. Its main objective was to verify the answers given by the treatment groups in the post-test. The respondents were asked to justify their choices in the multiple-choice rational cloze test. The interview data were audio recorded to facilitate analysis and strengthen the validity of the interview.

Finally, validity and reliability were discussed with reference to the research design, procedure and the instruments used to measure the dependent variables of

both experiments together with mentioning many ethical issues which were carefully considered throughout the research stages. The data collected are presented and analysed in the following chapter.

Chapter Six

Presenting and analysing data

6.1. Introduction

In the previous chapter the research problem and questions were stated. This was followed by an explanation of the research design used for collecting the data. The quantitative and qualitative research methods adopted in this work were presented including the procedure for applying the questionnaire, the intervention programmes, and the semi-structured interview. Reliability and validity in relation to the research methods, the measuring instruments and the procedure were also discussed, and finally, the research ethics were discussed in relation to the research methods used and the data collection procedures.

In this chapter the raw data collected from the questionnaire, the experiments, and the semi-structured interview are presented and analysed in relation to the research questions, using the SPSS for Windows software, version 12.0.

As explained in Chapter Five, a self-completion questionnaire was used to collect descriptive data to shed some light on the attitudes of the research participants regarding conjunctions and their role in reading comprehension. The data were used for preparing the reading intervention programme given to the treatment groups of the experiments organised in the Gharian and Sabrata English Departments. These experiments were the second major method of collecting quantitative data. The collected data are presented, interpreted, and analysed with reference to the relevant research questions. Finally, data gathered from interviews with participants of the treatment groups are presented and discussed with the purpose of validating the results of the experiments. Some of this data was quantified and statistically analysed.

Other miscellaneous data mentioned by the interview respondents were analysed qualitatively.

6.2. Self-completion questionnaire data analysis

In order to design an effective reading comprehension programme which was used by the researcher as a part of the intervention programme, questionnaire respondents were asked to express their attitudes towards conjunctions and their impact on reading comprehension. The questionnaire was completed by 200 students in the presence of the researcher. The respondents were asked about their reading in English and their views on the importance of conjunctions to reading comprehension. Their ability to identify conjunctive types and recognise their semantic functions and their ability to use them effectively in their reading comprehension were also targeted by the questionnaire items. In addition, the questionnaire provided information about the respondents' attitudes towards their current reading syllabus and the level of inclusion of conjunctions in both the syllabus and classroom activities.

Students' responses to the questionnaire items were used to answer the first thesis question, which was about the attitudes of Libyan university students towards conjunctions and their relation to reading comprehension. The data from the questionnaire were classified into the following categories:

6.2.1. Age and gender

Among the respondents who completed the questionnaire 180 (90 per cent) were females and 20 (10 per cent) were male students. Their minimum age was 20 and the maximum was 25 years old. The average age was calculated to be about 22 years old as shown in Table 14 and illustrated Figure 3 and 4 below.

Table 14 Age and gender of questionnaire respondents

No	*Gender*				*Age*		
200	male	percent	female	percentage	minimum	maximum	mean
	20	10%	180	90%	20	25	21.86

Age and gender had important implications for designing the intervention reading programme. This was because the syllabus prepared for mature adult students differs from the one designed for primary school children. In addition, mature adult female students are usually interested in topics which could be dissimilar to their male counterparts. As discussed above in Chapter Five, topics such as car racing and football game are not suitable for Libyan female students brought up in a conservative society. Thus, the topics were chosen to suit both mature male and female students. (Spread sheet of the questionnaire data are found in appendix 2.2)

Figure 3 Respondents' gender

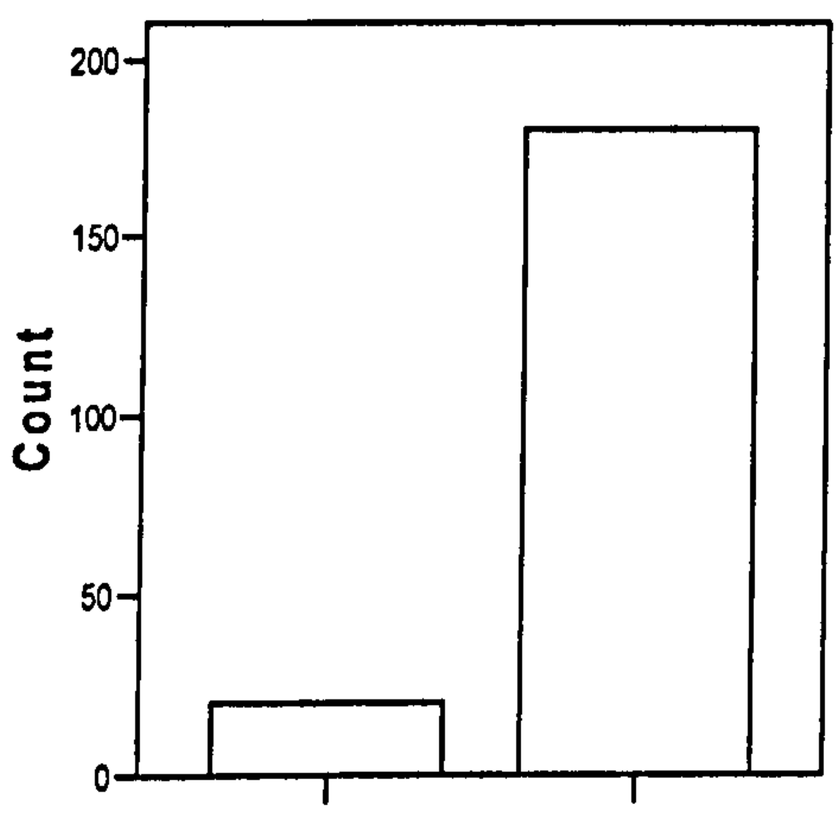
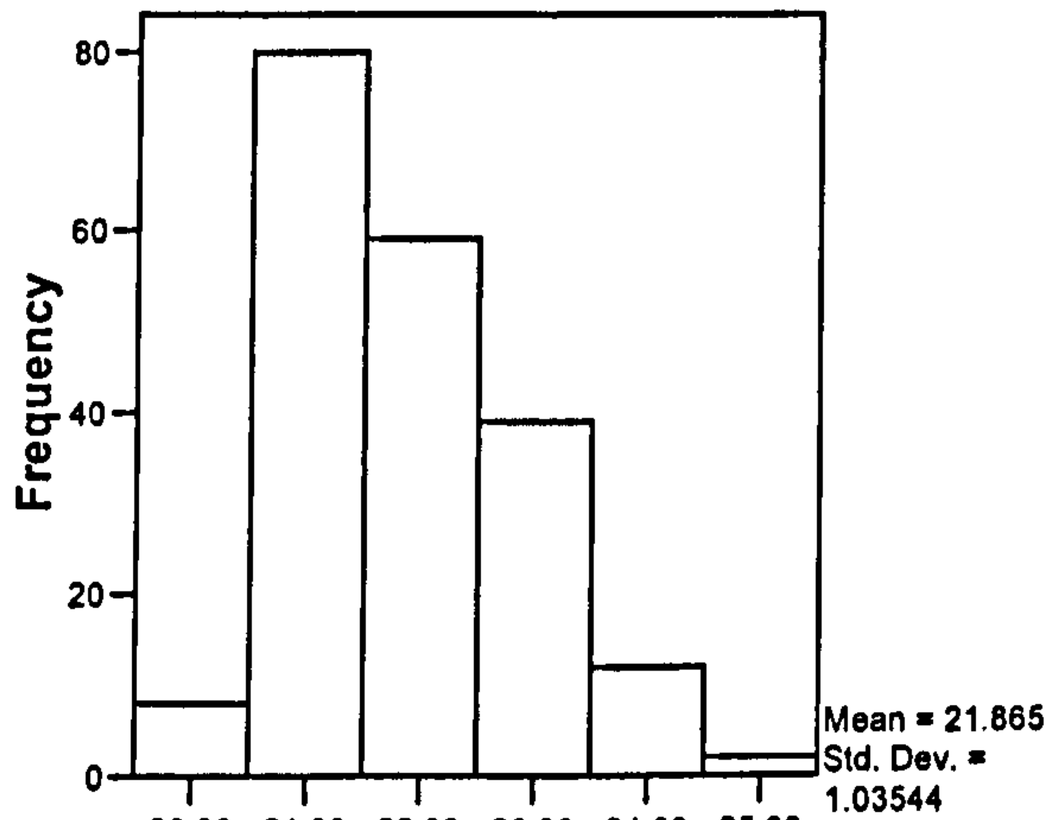


Figure 4 Respondents' age



6.2.2. Respondents' reading in English background

The questionnaire respondents were asked about their reading habits of English materials. 95 (47.5 per cent) said they read materials in English every day,

Table 14 Age and gender of questionnaire respondents

No	*Gender*				*Age*		
200	male	percent	female	percentage	minimum	maximum	mean
	20	10%	180	90%	20	25	21.86

Age and gender had important implications for designing the intervention reading programme. This was because the syllabus prepared for mature adult students differs from the one designed for primary school children. In addition, mature adult female students are usually interested in topics which could be dissimilar to their male counterparts. As discussed above in Chapter Five, topics such as car racing and football game are not suitable for Libyan female students brought up in a conservative society. Thus, the topics were chosen to suit both mature male and female students. (Spread sheet of the questionnaire data are found in appendix 2.2)

Figure 3 Respondents' gender

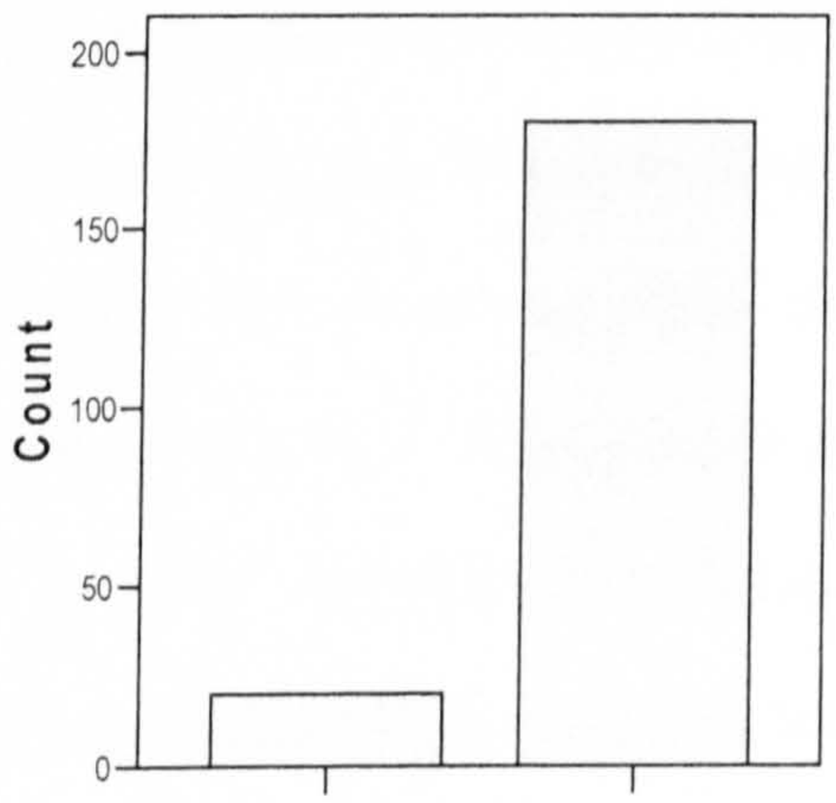
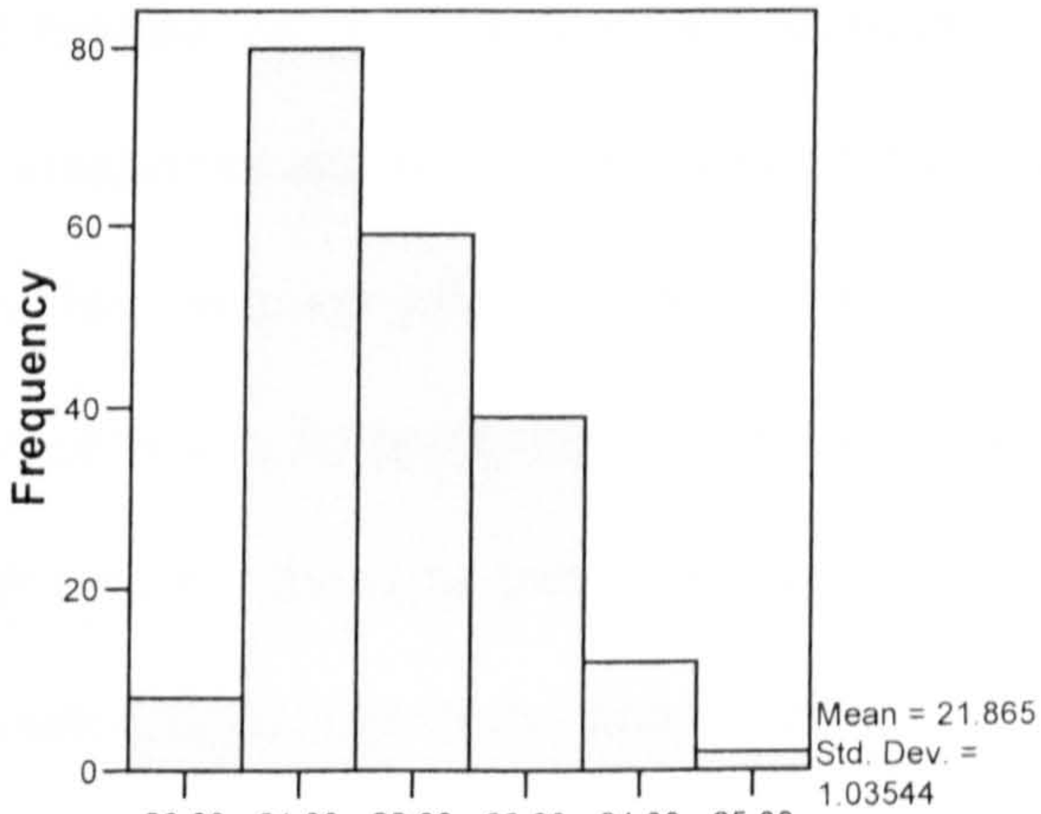


Figure 4 Respondents' age



6.2.2. Respondents' reading in English background

The questionnaire respondents were asked about their reading habits of English materials. 95 (47.5 per cent) said they read materials in English every day,

and 65 (32.5 per cent) said they usually accessed to English written materials three times a week. A minority of 31 (15.5 per cent) said they only read in English once a week and three respondents (1.5 per cent) claimed that they never read in English. Six other missing data were reported, as Table 15 shows:

Table 15 Respondents' reading in English language materials

	Frequency	*Percentage*
Once a day	95	47.5
3 times /week	65	32.5
Once a week	31	15.5
Never	3	1.5
Missing data	6	3.0
Total	200	100.0

As the table above reveals, almost half of the respondents claimed that they had access to English written materials everyday with the remainder indicating it was not a part of their daily schedule. However, based on the researcher's experience, most of the respondents did not have the opportunity to read genuine authentic materials written in English. This was because most of the English departments did not have libraries. Moreover, English magazines and newspapers were not available for sale in most Libyan cities, and if they were on sale their prices were beyond students' budgets. Regardless of my experience, 50 percentage of the questionnaire respondents said they often read newspapers and the same percent claimed they often read magazines beside other literature materials such as stories and novels.

6.2.3. Focus on conjunctions when reading for comprehension

Using Likert scales, the questionnaire respondents were asked to give their attitudes towards the focus on conjunctions and the semantic relationships they signal in written text. 80 (40 per cent) of the respondents believed that this reading strategy was very important and 63 (31.5 per cent) thought that this strategy was important.

However, only 22 (11 per cent) and 13 (6.5 per cent) thought that this strategy was either of little or no importance at all. 21 (10.5 per cent) were not sure.

Table 16 Focus on conjunctions and the relations they impose on written text

	Frequency	*Percentage*
Very important	80	40.0
Important	63	31.5
Not sure	21	10.5
Little important	22	11.0
Not important	13	6.5
Missing data	1	0.5
Total	200	100.0

A close reading of the table above shows that about 72 per cent of the questionnaire respondents thought that focusing on conjunctions and the semantic relations they impose on written text were important. In contrast, about 30 per cent were either not sure or they believed that such a reading strategy was not their prime concern when they read for comprehension. This positive attitude towards this reading strategy was considered when the researcher prepared the reading intervention programme.

The fourth item of the questionnaire asked the respondents about whether all conjunctive types facilitated reading comprehension to the same level or if some of them have a better facilitative role than others. 115 (57.5 per cent) of the respondents believed that all conjunctive types facilitated reading comprehension to the same level. Another 60 (30 per cent) thought that some conjunctive types had better facilitative roles than others. Only 17 (8.5 per cent) claimed that conjunctions had no effect on reading comprehension, and 7 respondents (3.5 per cent) said conjunctives had a negative impact on reading production. These percentages are shown in table 17 below:

Table 17 Conjunction impact on reading comprehension

	Frequency	*Percentage*
All conjunctions facilitate Reading comprehension	115	57.5
Some facilitate reading comprehension	60	30.0
They have no effect on reading comprehension	17	8.5
They have negative effect on reading comprehension	7	3.5
Missing data	1	0.5
Total	200	100.0

It was clear that the majority of the respondents (57 per cent) believed that all conjunctive types facilitate reading comprehension. 30 per cent thought some conjunctive types are more facilitative to reading comprehension than others, while a few cases claimed that conjunctions either have no effect or have a negative effect on the reading comprehension of EFL readers.

These findings are in line with the viewpoints of many linguists and psycholinguists mentioned in the literature review regarding the impact of conjunctions on reading comprehension such as Geva (1986), Caron et al.(1988), Goldman and Murray (1992), Millis et al (1993), Murray (1997), Traxler et al. (1997), Ozono and Ito (2003), and many others. This is discussed in the next chapter.

When the questionnaire respondents were asked whether it was easy for them to identify conjunctions, 54 (27 per cent) said identifying conjunctions was very easy and 74 (37 per cent) believed that they could easily do so. However, a considerable number 48 (24 per cent) thought conjunctive identification was not easy for them. Furthermore, 23 (11.5 per cent) believed that such a task was difficult.

It seems that with easy conjunctions such as *and, but, yet* and *so* in mind about 65 per cent of the respondents thought conjunctions were easy to identify. On the other hand, about 35 per cent believed that these cohesive devices were either not easy or difficult to identify. This represents the vague image that some respondents

had about the accurate definition of conjunctions and the number of conjunctions the English language has.

Table 18 Respondents' ability to identify conjunctions

	Frequency	*Percentage*
Very easily	54	27.0
Easily	74	37.0
Not so easily	48	24.0
Difficult to identify	23	11.0
Missing data	1	0.5
Total	200	100.0

Conjunctive devices as defined by Halliday and Hasan (1976) join two independent sentences. This essential vital function of conjunctions was the topic of the questionnaire item number eight. The respondents were asked about their understanding of the linking role of conjunctions in written text. 45 (27 per cent) of the respondents said they always managed to recognise this function and 74 (37 per cent) said they did so most of the time. 60 (30 per cent) claimed that they only sometimes did that. A few cases admitted that they rarely understood this conjunctive function.

Table 19 Identifying the linking sentence function of conjunctions

	Frequency	*Percentage*
Always	54	27.0
Most of the time	74	37.0
Some times	60	30.0
Rarely	12	6.0
Total	200	100.0

As shown in the table above, about 64 per cent of the respondents claimed they could recognise the linking function of conjunctions most of the time. This meant that the respondents could distinguish between conjunctions as defined by Halliday

and Hasan (1976) and other linking items such as coordinators and subordinators, which I doubt. In contrast, about 35 per cent were not fully confident of their understanding of this conjunctive role.

Guessing or prediction is one of the major reading strategies proficient readers adopt when reading for comprehension. With the assumption that understanding the function of conjunctions can contribute to successful prediction, the questionnaire respondents were asked whether they used conjunctions in prediction. 55 (27.5 per cent) of them could always use conjunctions in predicting meaning and 66 (33 per cent) could do that most of the time. About a quarter of the respondents 57 (28.5 per cent) said they could use conjunctions in predicting meaning only sometimes. Yet, 20 (10 per cent) accepted that they rarely use conjunctions in prediction, as shown in Table 20 below

Table 20 Using conjunctions in predicting meaning

	Frequency	*Percentage*
Always	55	27.5
Most of the time	66	33.0
Some times	57	28.5
Rarely	20	10.0
Missing data	2	1.0
Total	200	100.0

It was concluded that about 61 per cent of the respondents reported that they used a prediction strategy while reading for comprehension and considered conjunctions as their major clue to successful prediction. 29 per cent admitted that they used other means in prediction beside using conjunctions. A few respondents (10 per cent) reported that they rarely used conjunctions in the mentioned reading strategy.

6.2.4. Using conjunctions in speaking and writing

With the assumption that the common use of conjunctions in speaking and writing helps in using them in reading comprehension, the respondents were asked about how often they used them during their speaking and writing. 61 (30.5 per cent) of the respondents said they always used conjunctions while speaking and 71 (31.5 per cent) said they did so most of the time. 54 (27 per cent) admitted they only sometimes used conjunctions in speaking. A few respondents said they rarely used conjunctions while speaking as presented in Table 21 below.

Table 21 Using conjunctions in speaking

	Frequency	*Percentage*
Always	61	30.5
Most of the time	71	35.5
Some times	54	27.0
Rarely	14	7.0
Total	200	100.0

The respondents' attitude towards using conjunctions in writing came out with the following percentages: 39 (19.5 per cent) of the respondents believed that it was very easy for them to use conjunctions in writing and 112 (56 per cent) stressed that such a task was easy to practise. On the other hand, 39 (19, 5 per cent) said that it was not so easy for them to use conjunctions in writing. Furthermore, 10 (5 per cent) thought conjunctions were difficult to use in writing.

Table 22 Using conjunctions in writing

	Frequency	*Percentage*
Very easy to use	39	19.5
Easy to use	112	56.0
Not easy to use	39	19.5
Difficult to use	10	5.0
Total	200	100.0

The percentages mentioned in Table 22 above show that about 70 per cent of the respondents used conjunctions regularly when they speak and write in English. This high percentage represented a positive attitude towards the importance of conjunctions. Nevertheless, it could also represent the hazy image they had about the identity of conjunctions. It is possible that this high percentage represented respondents' use of English connectives in general.

6.2.5. Conjunction difficulty

To check whether the respondents of the questionnaire could distinguish conjunctive types as defined by Halliday and Hasan (1976) from other language categories such as coordinators and subordinators, and whether certain conjunctive types were easier for them than others, the respondents were asked about the level of difficulty they faced when using additive, adversative, causal, and temporal conjunctions. 38 (19 per cent) felt that the additive conjunctions were very easy for them to use and 68 (34 per cent) believed that they were easy to use. Contrary to this, 72 (36 per cent) stressed that the additives were not so easy to use and 20 (10 per cent) reported that they were difficult to use.

The adversative conjunctions were very easy for 38 (19 per cent) of the respondents and 84 (42 per cent) believed that this conjunctive type was easy to use! Yet, 63 (31.5 per cent) admitted that the adversatives were not so easy to use and 13 (6.5 per cent) accepted that these conjunctives were difficult to use.

The causal conjunctions were very easy for 67 (33.5 per cent) of the respondents and 106 (53 per cent) believed that these conjunctives were easy to use. On the contrary, only 19 (9.5 per cent) admitted that the causals were not easy to use and another 8 (4 per cent) said they were difficult to use.

Similar to the causal conjunctions, 65 (32.5 per cent) of the respondents said the temporal conjunctives were very easy to use and 89 (44.5 per cent) thought they were easy to use. Only 26 (13 per cent) believed that the temporals were not easy to use and 20 (10 per cent) said they were difficult to use.

Table 23 Use of conjunctive types

	Additive		Adversative		Causal		Temporal	
	frequency	percent	frequency	percent	frequency	percent	frequency	percent
Very easy to use	38	19.0	38	19.0	67	33.5	65	32.5
Easy to use	68	34.0	84	42.0	106	53.0	89	44.5
Not easy to use	72	36.0	63	31.5	19	9.5	26	13.0
Difficult to use	20	10.0	13	6.5	8	4.0	20	10.0
Missing data	2	1.0	2	1.0	00	00	00	00
Total	200	100.0	200	100.0	200	100.0	200	100.0

Three conjunctions were given from each conjunctive type as examples to help the respondents identify them. It is possible that the various percentages appearing in Table 23 above represented the type of conjunctions the respondents had in mind when they completed the questionnaire, rather than the conjunctive types classified by Halliday and Hasan (1976). For example, the high percentage, (87 per cent), of the respondents who said the causals were easy for them to use might have the conjunctive *because* in mind when they responded to the questionnaire.

6.2.6. Inclusion of conjunctions in syllabus and classroom activities

The respondents had spent three years learning English language skills through different courses before they successfully joined their fourth year of study in their English departments. The last two questionnaire items asked them about their attitudes towards the inclusion of conjunctions in the syllabus they had been exposed to in their former years of study and the level of coverage of conjunctions by their teachers in the classroom. 60 (30 per cent) of the respondents believed there was enough coverage of conjunctions in the syllabus they had followed. On the other

hand, a considerable number of respondents, 123 (61.5 per cent), believed that there was little coverage of conjunctions in that syllabus and 17 (8.5 per cent) said there was no coverage at all of conjunctions in their syllabus as shown in Table 24 below.

Table 24 Inclusion of conjunctions in syllabus

	Frequency	*Percentage*
Enough coverage of conjunctions	60	30.0
Little coverage of conjunctions	123	61.5
No coverage of conjunctions	17	8.5
Total	200	100.0

Similar to the results of the previous questionnaire item, 43 (21.5 per cent) of the respondents said there were sufficient tasks about conjunctions given by their English teachers in the classroom. In contrast, 117 (88.5 per cent) believed that only a few tasks about conjunctions were given to them and considerable number of 39 (19.5 per cent) said no tasks at all were given to them, as revealed in the table below.

Table 25 Focus on conjunctions in classroom activities

	Frequency	*Percentage*
Sufficient tasks of conjunctions	43	21.5
A few tasks of conjunctions	117	58.5
No tasks of conjunctions	39	19.5
Missing data	1	0.5
Total	200	100.0

Regarding the inclusion of conjunctions in the syllabus, it was clear that about 70 per cent of the respondents had the attitude that there was either little or no coverage at all of conjunctions in their current syllabus. There can be no doubt that such an insufficient coverage of conjunctions in the respondents' syllabus could have a negative impact on their knowledge of them (i.e. their ability to identify conjunctions, and recognise their function and use). This suggested that more explicit

teaching of conjunctions in their fourth year of study was needed. This was supported by the 78 per cent of the respondents who said that only a few or no activities related to conjunctions were given to them in classroom.

6.2.7. Exploring relationships between the questionnaire items

While going through the self-completion questionnaire data, coherent relationships between responses to some of its items were observed. It is suggested that the homogeneity of these relationships contributed to the validity of the questionnaire items and specified the directions of the reading intervention programme preparation. Some of these relationships were evaluated by using the chi squared statistical test as follows:

1. There was a relationship between the percentage of students who said their syllabus included little or no coverage of conjunctions and the students who believed that their teachers did not give them enough tasks on conjunctions in classroom.

In order to explore the significance of this relationship, a non parametric chi square test was used. A significant relationship was found between the inclusion of conjunctions in the respondents' syllabus of their former years of study and the focus on conjunctions in the classroom activities ($p = 0.000$).

Table 26 Relationship between the inclusion of conjunctions in the current syllabus and the focus of conjunctions in classroom activity

Pearson chi square	P-value
26.728	0.000

This suggested that the inclusion of conjunctions in syllabus was significantly related to the explicit teaching of conjunctions in classroom. In other words, there was

a strong relationship between the inclusion of conjunctions in the syllabus and their coverage in classroom activities.

2. A significant relationship was found between identification of conjunctions and focusing on conjunctions in reading comprehension. The non parametric chi square analysis revealed a significant relationship between the two items ($p = 0.038$).

Table 27 Identification of conjunctions and focusing on them in reading comprehension

Pearson chi square	P-value
10.151	0.038

This result indicated that focusing on conjunctions in reading comprehension was significantly related to the respondents' identification of conjunctions.

3. A considerable relationship was uncovered between the identification of conjunctions and the respondents' using of conjunctions in speaking. The non parametric chi square procedure suggested that there was a significant relationship between the two analysed variables ($p = 0.029$).

Table 28 Relationship between identification of conjunctions and using them in speaking

Pearson chi square	P-value
22.876	0.029

From these results it appeared that using conjunctions in speaking was significantly related to the respondents' identification of conjunctions.

4. A significant relationship was found between using conjunctions in prediction and the inclusion of conjunctions in department syllabus. The non parametric chi square

test revealed that there was a significant relationship between the analysed items (p = .039) as shown in Table 29 below.

Table 29 Relationship between using conjunctions in prediction and the inclusion of conjunctions in department syllabus

Pearson chi square	P-value
16.251	0.039

This suggested that using conjunctions in prediction was significantly related to the inclusion of conjunctions in the department syllabus.

5. A non parametric chi square test was conducted to check the relationship between understanding the role of conjunctions in linking sentences and the inclusion of conjunctions in classroom activities. A significant relationship was found between the analysed variables (p = 0.018) as revealed in Table 30 below.

Table 30 Relationship between understanding the role of conjunctions in linking sentences and the inclusion of conjunctions in classroom activities

Pearson chi square	P-value
19.981	0.018

The result of the chi square test indicated that understanding the role of conjunctions in linking sentences was significantly related to the inclusion of conjunctions in classroom activities.

It is observed that there was a strong relationship between the inclusion of conjunctions in the participants' syllabus and in classroom activities and their ability to predict meaning when reading for comprehension and the role of conjunctions in linking sentences. In other words, the participants were not able to use conjunctions in

prediction because of their little exposure to conjunctions in syllabus and in classroom.

The relationships explored between some of the questionnaire responses presented above suggested that the respondents to the questionnaire gave their actual attitudes towards the topics mentioned in the questionnaire items and that the respondents gave the completion of the questionnaire their full attention. This belief is supported by the questions they asked to be sure that they understood all the questionnaire items. The attendance of the researcher at the questionnaire completion sessions had a positive impact on the credibility of the information gathered from the questionnaire.

6.2.8. Summary

The self-completion questionnaire was designed to collect data needed for preparing the reading materials of the reading intervention programme. Important information related to the respondents and their attitudes towards conjunctions were gathered. These findings answer the first thesis question which asked about the attitudes of the study participants towards conjunctions and their relation to reading comprehension.

The descriptive data from the questionnaire revealed that the participants of the programme were mature students with an average age of about 22 years old. Most of them were females. Only 10 per cent were males. The participants had a positive attitude towards the importance of conjunctions to reading comprehension. This encouraged the researcher to go ahead with the preparation of the reading intervention programme which included the explicit teaching of conjunctions with the purpose of using them in facilitating reading comprehension.

The interpretation of the data revealed that the questionnaire respondents had some background information about conjunctions but their knowledge was not deep enough for them to be able to use them in their reading comprehension. This was because of the lack of focus on conjunctions both in their current syllabus and in classroom activities. All of these vital points were taken into consideration when the reading intervention programme given to the treatment groups was prepared. Information related to conjunctions (i.e. their form, meaning, and use) was included in the explicit teaching of the prepared reading comprehension syllabus, the major component of the intervention programme. Data collected from applying the intervention programme are presented and analysed next.

6.3. Analysis of the intervention programme data

As explained in Chapter Five, the major research method used in this study was experimentation. For measuring the impact of textual cohesive conjunctions on the reading comprehension of Libyan university students, the research participants were divided into two groups: a treatment group and a comparative group.

Gharian English Department groups were pre-tested to measure their level of reading comprehension proficiency and to what extent they were able to identify conjunctions and recognise their semantic function. This was followed by explicitly teaching the treatment group how to identify conjunctions, recognise their function and use them in reading comprehension. However, the Sabrata English Department groups were only post-tested, for the reasons mentioned in the previous chapter. All groups in Gharian and Sabrata were finally post-tested to examine the effect of the reading intervention programme on the treatment groups. These tests included:

identifying conjunctions, recognising the semantic relations they signal, and how all of these were reflected in the reading comprehension of the treatment groups.

Data collected by pre-testing and post-testing the treatment groups and the comparative groups are presented, interpreted, and analysed here. Statistical t-tests were conducted to find out if there were any significant differences between the mean scores of the treatment group and the comparative group in pre and post-tests results.

6.3.1. Data analysis of the Gharian intervention programme

Pre and post-tests were organised in Gharian English Department. Numerical data were collected and analysed quantitatively. The analysis procedure included:

1. Arranging the pre-test scores of the treatment and comparative groups into categories and comparing them in order to have an initial idea about their score level and distribution, and to what extent they were similar. This involved descriptive analysis of the identification of conjunction test scores, function recognition of conjunction test scores, and reading comprehension test scores. Independent-samples t-tests were conducted to compare the mean scores of tests.

2. Analysing the pre-and post-test results of the comparative group by arranging the scores into categories and describing them using frequencies and percentages. That was followed by using a t-test to check if there were any significant difference between the means of the identification of conjunctions, the function recognition of conjunctions, and the reading comprehension in the pre and post test scores.

3. Analysing pre and post-tests scores of the treatment group by classifying the results into categories, each with a frequency and a percentage. This was followed by analysing the test results by using a t-test to check if there were any significant differences between the means of the identification of conjunctions, the function

recognition of conjunctions, and the reading comprehension in the pre-and post-test scores.

4. Classifying the post-test results of the treatment and comparative groups into categories and calculating their frequencies and percentages. This involved the descriptive analysis of the identification of conjunctions, the function recognition of conjunctions, and the reading comprehension in the post-test scores. An independent-samples t-test was conducted to check if there were any significant differences between the means of the post-tests results in the two groups. The procedure presented above is shown in Table 31 below.

Table 31 Summary of Gharian groups data analysis

Intervention groups	*Number of tests*	*Test topic*	*T-test analysis* Comparing means
Treatment & comparative group	Pre- test	Identification of conjunction Function recognition of conjunction Reading comprehension	An independent-samples t-test
Comparative group	Pre-post tests	Identification of conjunction Function recognition of conjunction Reading comprehension	A paired-samples t-test
Treatment group	Pre-post tests	Identification of conjunction Function recognition of conjunction Reading comprehension	A paired-samples t-test
Treatment & comparative group	Post-test	Identification of conjunction Function recognition of conjunction Reading comprehension	An independent-samples t-test

The data were analysed with reference to the following thesis questions:

1. What is the attitude of fourth year English department students in Libyan universities towards conjunctions and their relations to reading comprehension?

2. Can the study participants identify the items which function as conjunctions, interpret their function, and justify their choices of the multiple-choice rational cloze reading comprehension test correctly?

3. Does the ability to identify conjunctions and recognise their function facilitate the reading comprehension of the study participants?

4. Are some conjunctive types more facilitative to reading comprehension than others?

These questions are mentioned separately wherever a relevant answer to any question was reached, to remind the reader of the relationship between the findings and thesis questions.

6.3.1.1. Analysing the pre-test results of the comparative group

As a starting point, the raw data collected by pre-testing the treatment and comparison groups of Gharian English Department were categorised and described in the form of frequencies and percentages. This descriptive analysis included: scores of the identification of conjunctions test, the function recognition of conjunction test and the reading comprehension test.

6.3.1.1.1. Analysis of the identification of conjunction pre-test results

This test included a written text containing a number of conjunctive types. Examinees were asked to identify these conjunctions and underline them. The test was objectively scored by giving two points to every correct choice. Scores were classified into categories to facilitate their descriptive analysis.

As shown in Table 32 below, the minimum test score was below 25 and the maximum was 75. Most participants of the comparative group scored below 50. At the lower level, five (33.33 per cent) participants scored below 25, and seven (46.88 per cent) participants from the comparison group scored between 30 and 50. Only three (13.33 per cent) scored between 65 and 75, which classified them at the intermediate level.

Table 32 Scores of the identification of conjunctions pre-test

Scores	*Comparison group*	
	Frequency	**Percentage**
25	5	33.33
30	0	00.0
35	2	13.33
40	3	20
50	0	00.0
55	2	13.33
60	0	00.0
65	1	6.66
70	1	6.66
75	1	6.66
80	0	00.0
85	0	00.0
90	0	00.0
Total	0	00.0
	15	**100.0**

6.3.1.1.2. Analysis of the function recognitions of conjunction pre-test results

A list of conjunctions from the four conjunctive types as classified by Halliday and Hasan (1976) was given to the participants in the treatment and comparison groups. The list included a similar number of conjunctions from each conjunctive type. The participants were asked to classify the given conjunctions according to their conjunctive function types. One point was given for every correct answer.

As Table 33 below revealed, the minimum tests score recorded was 25 and the maximum was 55. Six (40 per cent) participants from the comparative group scored below 30 and 5 (33.33 per cent) scored between 35 and 40. At the passing level, four (20 per cent) participants scored between 50 and 55.

Table 33 Function recognition of conjunctions pre-test scores

Scores	*Comparison group*	
	Frequency	**Percentage**
25	0	00.0
30	6	40
35	2	13.33
40	3	20
45	0	00.0
50	1	6.66
55	3	20
60	0	00.0
65	0	00.0
70	0	00.0
75	0	00.0
80	0	00.0
85	0	00.0
90	0	00.0
Total	**15**	**100.0**

6.3.1.1.3. Analysis of the reading comprehension pre-test results

A cloze test was modified to take the form of a multiple-choice rational cloze test and used to examine the reading comprehension of the study groups. Both treatment and comparison groups took the same test. The participants were asked to choose a suitable option given in the form of multiple-choice items to be compatible with the meaning which existed between the text's independent sentences. Every correct choice was given two points. Scores were classified into categories, and given a frequency and a percentage as shown in Table 34 below.

As table 34 below shows, five (33.33 per cent) participants from the comparative group scored below 30. At the same low level, eight (53.33 per cent) from the comparative group scored between 35 and 50. Only two (13.33 per cent) participants scored above 50.

Table 34 Reading comprehension pre-test scores

Scores	*Comparison group*	
	Frequency	**Percentage**
25	2	13.33
30	3	20
35	1	6.66
40	3	20
45	4	26.66
50	0	00.0
55	2	13.33
60	0	00.0
65	0	00.0
70	0	00.0
75	0	00.0
80	0	00.0
85	0	00.0
90	0	00.0
Total	**15**	**100.0**

6.3.1.2. Analysing the pre-test results of the treatment group

The raw data collected by pre-testing the treatment group of Gharian English Department were categorised and described in the form of frequencies and percentages. This descriptive analysis included: scores of the identification of conjunctions test, the function recognition of conjunction test scores and the reading comprehension test scores.

6.3.1.2.1. Analysis of the identification of conjunction pre-test results

As shown in Table 35 below, the minimum test score was below 25 and the maximum was 70. Most participants of the treatment group scored below 50. At the lower level, five (33.33 per cent) participants scored below 25 and nine (60 per cent) participants scored between 30 and 50. Only one (6.66 per cent) scored 65, which classified them at the intermediate level.

Table 35 Scores of the identification of conjunctions pre-test

Scores	*Treatment group*	
	Frequency	**Percentage**
25	5	33.33
30	3	20
35	0	00.0
40	2	13.33
45	2	13.33
50	2	13.33
55	0	00.0
60	0	00.0
65	1	6.66
70	0	00.0
75	0	00.0
80	0	00.0
85	0	00.0
90	0	00.0
Total	**15**	**100.0**

6.3.1.2.2. Analysis of the function recognitions of conjunction pre-test results

Table 36 below revealed that the minimum test score recorded in the treatment group was 25 and the maximum was 55. Three (20 per cent) participants scored below 30 and twelve (80 per cent) participants scored between 35 and 50.

Table 36 Function recognition of conjunctions pre-test scores

Scores	*Treatment group*	
	Frequency	**Percentage**
25	2	13.33
30	1	6.66
35	7	46.66
40	4	26.66
45	0	00.0
50	1	6.66
55	0	00.0
60	0	00.0
65	0	00.0
70	0	00.0
75	0	00.0
80	0	00.0
85	0	00.0
90	0	00.0
Total	**15**	**100.0**

6.3.1.3.3. Analysis of the reading comprehension pre-test results

A cloze test was modified to take the form of a multiple-choice rational cloze test and used to examine the reading comprehension of the study groups. Both treatment and comparison groups took the same test. The participants were asked to choose a suitable option given in the form of multiple-choice items to be compatible with the meaning which existed between the text's independent sentences. Every correct choice was given two points. Scores were classified into categories and percentages to be ready for further analysis.

As table 37 below shows, six (40 per cent) participants from the treatment group scored below 30. At the same low level, seven (46.66 per cent) scored between 30 and 50 and only two (13.33 per cent) participants scored above 50.

Table 37 Reading comprehension pre-test in categories

Scores	*Treatment group*	
	Frequency	**Percentage**
25	4	26.66
30	2	13.33
35	1	6.66
40	2	13.33
45	1	6.66
50	3	20
55	2	13.33
60	0	00.0
65	0	00.0
70	0	00.0
75	0	00.0
80	0	00.0
85	0	00.0
90	0	00.0
Total	**15**	**100.0**

6.3.1.3. Analysis the pre-test results of the comparative and treatment groups

After the pre-test results of the treatment and the comparison groups were presented in the form of percentages and frequencies they will be compared to check

whether the difference between them is significant or not. The results of the pre-test of the identification of conjunctions, the function recognition of conjunction and the reading comprehension will be compared.

6.3.1.3.1. Analysis of the identification of conjunction pre-test results

This test included a written text containing a number of conjunctive types. Examinees were asked to identify these conjunctions and underline them. The test was objectively scored by giving two points to every correct choice. Scores were classified into categories to facilitate their descriptive analysis.

As shown in Table 38 below, the minimum test score was below 25 and the maximum was 70 in both groups. Most participants of the treatment group and the comparative group scored below 50. At the lower level, five (33.33 per cent) participants from each group scored below 25, nine (60 per cent) participants of the treatment group, and seven (46.88 per cent) participants from the comparison group scored between 30 and 50. Only one (6.66 per cent) from the treatment group and two (13.33 per cent) from the comparison group scored between 50 and 70, which classified them at the intermediate level.

From this description it appeared that both groups had approximately the same level of performance both in score level and frequency. It was also clear that both groups showed low performance in the test.

Table 38 Scores of the identification of conjunctions pre-test in categories

Scores	*Treatment group*		*Comparison group*	
	Frequency	**Percentage**	**Frequency**	**Percentage**
25	5	33.33	5	33.33
30	3	20	0	00.0
35	0	00.0	2	13.33
40	2	13.33	3	20
45	2	13.33	0	00.0
50	2	13.33	2	13.33
55	0	00.0	0	00.0
60	0	00.0	1	6.66
65	1	6.66	1	6.66
70	0	00.0	1	6.66
75	0	00.0	0	00.0
80	0	00.0	0	00.0
85	0	00.0	0	00.0
90	0	00.0	0	00.0
Total	**15**	**100.0**	**15**	**100.0**

6.3.1.3.2. Analysis of the function recognitions of conjunction pre-test results

A list of conjunctions from the four conjunctive types as classified by Halliday and Hasan (1976) was given to the participants in the treatment and comparison groups. The list included a similar number of conjunctions from each conjunctive type. The participants were asked to classify the given conjunctions according to their conjunctive function types. One point was given for every correct answer.

Table 39 below revealed, the minimum tests score recorded was 25 and the maximum was 55. Three (20 per cent) participants from the treatment group and six (40 per cent) from the comparative group scored below 30. 12 (80 per cent) participants from the treatment group scored between 35 and 50. At the intermediate level, three (20 per cent) participants from the comparative group scored between 60 and 70.

It was clear that the scores of both groups were approximately similar in level and distribution. This low achievement was in line with their achievement in the

identification of conjunctions pre-test. This result suggested that the participants' knowledge of the semantic function of conjunctions was limited.

Table 39 Function recognition of conjunctions pre-test scores in categories

Scores	*Treatment group*		*Comparison group*	
	Frequency	**Percentage**	**Frequency**	**Percentage**
25	2	13.33	0	00.0
30	1	6.66	6	40
35	7	46.66	2	13.33
40	4	26.66	3	20
45	0	00.0	0	00.0
50	1	6.66	1	6.66
55	0	00.0	3	20
60	0	00.0	0	00.0
65	0	00.0	0	00.0
70	0	00.0	0	00.0
75	0	00.0	0	00.0
80	0	00.0	0	00.0
85	0	00.0	0	00.0
90	0	00.0	0	00.0
Total	**15**	**100.0**	**15**	**100.0**

6.3.1.3.3. Analysis of the reading comprehension pre-test results

A cloze test was modified to take the form of a multiple-choice rational cloze test and used to examine the reading comprehension of the study groups. Both treatment and comparison groups took the same test. The participants were asked to choose a suitable option given in the form of multiple-choice items to be compatible with the meaning which existed between the text's independent sentences. Every correct choice was given two points. Scores were classified into categories, and given a frequency and a percentage as shown in Table 34 below.

As table 40 below shows, six (40 per cent) participants from the treatment group and five (33.33 per cent) from the comparative group scored below 30. At the same low level, seven (46.66 per cent) participants from the treatment group and eight (53.33 per cent) from the comparative group scored between 30 and 50. Only two (13.33 per cent) participants in each group scored above 50. All in all, both study

groups did not pass the 55 mark, which meant that they had approximately similar levels and distributions of achievement

These findings suggested that both groups had low performance. The deteriorating achievement recorded was a natural consequence of the participants' poor performance in the two previous tests. It was observed that there was a close relationship between the results of all the pre-tests.

Table 40 Reading comprehension pre-test in categories

Scores	*Experimental group*		*Control group*	
	Frequency	**Percentage**	**Frequency**	**Percentage**
25	4	26.66	2	13.33
30	2	13.33	3	20
35	1	6.66	1	6.66
40	2	13.33	3	20
45	1	6.66	4	26.66
50	3	20	0	00.0
55	2	13.33	2	13.33
60	0	00.0	0	00.0
65	0	00.0	0	00.0
70	0	00.0	0	00.0
75	0	00.0	0	00.0
80	0	00.0	0	00.0
85	0	00.0	0	00.0
90	0	00.0	0	00.0
Total	**15**	**100.0**	**15**	**100.0**

6.3.1.1.4. Calculating means

As a part of the descriptive analysis of the data, the means of the three pre-tests scores were calculated. The following table presents the means of identification of conjunctions, function recognition of conjunctions and the reading comprehension pre-tests scores of the comparative and treatment groups.

Table 41 Means and standard deviations of the pre-test scores of Gharian groups

Study groups	*Identification of conjunctions*		*Function recognition of conjunction*		*Reading comprehension*		*third year RC. Cors.*
	*X	*SD	X	SD	X	SD	X
*Tr. Gr.	32.46	17.62	34.60	8.11	39.0	13.12	58.33
*Comp.Gr.	38.73	19.67	36.06	11.35	38.66	10.25	57.66
Difference	6.27		1.46		0.34		0.67
Percent	19.31		4.21		0.87		1.16

X = mean, SD = Std deviation, Tr. Gr. = treatment group, Comp. Gr. = comparative group, R.C. = reading comprehension, Cors = comprehension course

As shown in Table 41 above, the mean scores calculated for the treatment group tests and their counterparts in the comparative group were approximately similar. The differences between them were expected to be insignificant. The mean of the identification of conjunction pr-test scores of the treatment group was 32.46 and the mean of the comparative group was 38.73. The difference was 6.27 (19.31 per cent). Similar to this, the difference between the means of the study groups in the function recognition of conjunction tests was 1.46 (4.21 per cent). These small differences were supported by the minimal difference recorded between the reading comprehension tests scores of both groups of just 0.67 (1.73 per cent).

However, the standard deviations of the identification of conjunction pre-test scores of both groups were quite high, whereas, the standard deviations of the other tests were normal. This might be attributed to the level of knowledge the participants had about the nature of conjunctions. It appeared that some participants heard about conjunctions and could identify some of them, while others had no idea about them.

These relatively equal results were as a consequence of the random assigning of the participants to the intervention groups and to their identical reading skill background. In agreement with this, the researcher managed to get the scores of the participants' third year "reading comprehension course I". The means of both groups' scores were calculated and found to be 58.33 and 57.66. The difference between them

was 0.67 (1.16 per cent) as shown in Table 41 above. This minor difference supported the claim that both study groups were equal which strengthened the content validity of the measuring instruments used.

The means obtained above were used to explore if there was any significant difference between the pre-tests of the study groups. This was done by using a statistical t-test, which is the most appropriate statistical technique used to measure significance between intervention groups in education research.

6.3.1.1.5. T-test analysis

The purpose of using a t-test analysis is "to determine whether the means of two groups of scores differ to a statistically significant degree," (Kranzer and Moursund, 1999, p.89). Based on this, a statistical t-test was conducted to measure the significance of differences between the means of the pre-tests results of the study groups.

The null hypothesis in this case stated that "there was no significant difference between the means of the pre-tests results of the intervention groups." A t-test for independent-samples was selected to be used in this statistical analysis since two independent groups were analysed. The level of significance was chosen to be 0.05, which is widely used value in social science.

6.3.1.1.6. T-test analysis of identification of conjunction pre-test results

An independent-samples t-test was conducted to compare the identification of conjunction pre-test scores of the treatment group and the pre-test scores of the comparative group. There was no significant difference in scores for the treatment group ($M = 32.46$, $SD = 17.62$) and the comparative group [$M = 38.73$, $SD = 19.67$;

t (28) = -0.919, p =.366]. The magnitude of the differences in the means was very small (eta squared = 0.03).

Table 42 T-test result of the identification of conjunctions pre-test results

Identification of conjunctions	*Mean*	*SD*	*T*	*P-value*
Comparative group	38.73	19.67	-.919	.366
Treatment group	32.46	17.62		

The t-test analysis of the identification of conjunctions pre-test of both intervention groups revealed that the t-value was -0.919 and the probability value was 0.366. This P-value was greater than the threshold value of 0.05 which meant that there was no significant difference between the means of the study groups. In other words, there was no evidence to suggest that the study groups means differed.

6.3.1.1.7. T-test analysis of function recognition of conjunctions pre-test results

In the same way, an independent-samples t-test was conducted to compare the function recognition of conjunction pre-tests scores of the treatment group and the comparative group. There was no significant difference in scores for the treatment group (M = 34.60, SD = 8.11) and the comparative group [M = 36.06, SD =11.35; t (28) = -.407.p = .687]. The magnitude of the difference in the means was very small (eta squared = 0.01).

Table 43 T-test results of the function recognition of conjunctions pre-test results

Function recognition of conjunctions	*Mean*	*SD*	*T*	*P-value*
Comparative group	36.06	11.35	-.407	.687
Treatment group	34.60	8.11		

The t-test analysis of the function recognition of conjunctions pre-tests of the study groups indicated that the t-value was -0.407 and the probability value was 0.687. P-value was greater than the threshold value of 0.05 which revealed that there

was no significant difference between the means of the treatment group and the comparison group. Again, in this analysis there was no evidence to reject the null hypothesis.

6.3.1.1.8. T-test analysis of reading comprehension pre-test results

An independent-samples t-test was conducted to compare the reading comprehension pre-test scores of the treatment group and the comparative group. There was no significant difference in scores for the treatment group (M = 39.00. SD =13.12) and the comparative group [M = 38.66. SD =10.25; t = (28) =.078, p =.939]. The magnitude of the difference in the means was very small (eta squared = 0.002).

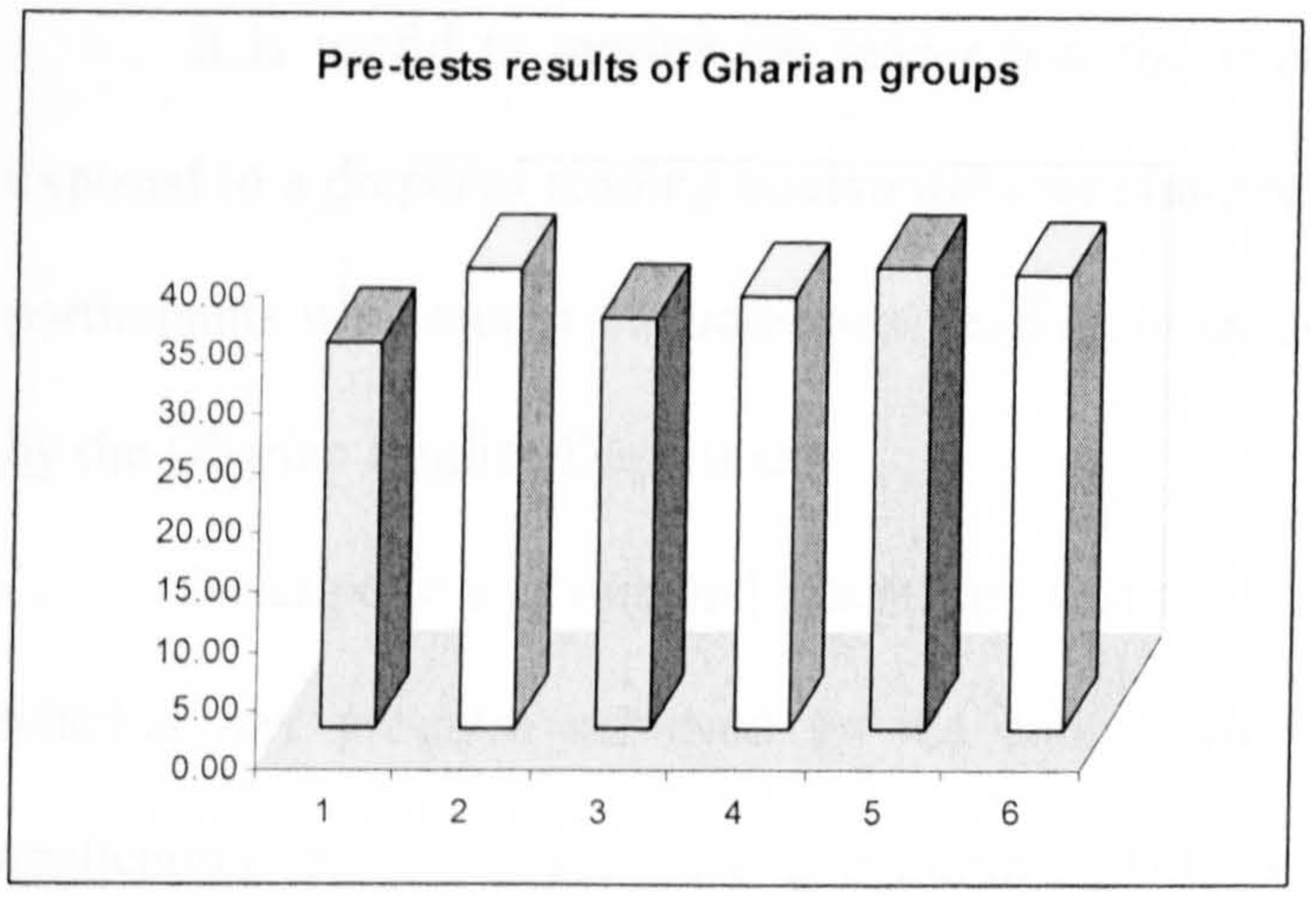
Table 44 T-test result of the reading comprehension pre-test results

Reading comprehension	*Mean*	*SD*	*T*	*P-value*
Comparative group	38.66	10.25	.078	.939
Treatment group	39.00	13.12		

The t-test analysis of the reading comprehension pre-test results of the study groups gave a t-value of 0.078 with a probability value of 0.939. The p-value was greater than the threshold value of 0.05. This result suggested that there was no significant difference between the means of the study groups' tests scores. In other words, there was no evidence that the study group means differed.

To sum up, the descriptive analysis and the t-test analysis of the intervention groups tests results suggested that the knowledge of the intervention groups with regards to conjunctions (i.e. form, function, and using them in reading comprehension) was similar, since no significant difference of means was recorded between them as Figure 5 below illustrates.

Figure 5 Pre-tests results of Gharian groups



Since no statistical evidence was found to suggest that the groups were different, any improvement recorded in the reading comprehension of the treatment group participants after their attending of the reading intervention programme could then be attributed to this programme.

To evaluate the impact of the reading intervention programme on the reading comprehension of the treatment group, both groups were post-tested after three months of explicit teaching of conjunctions to the treatment group. The same measuring instrument was used again as the post-test. This was to neutralise any external effect on the validity of the study.

However, before analysing the post-tests results of the intervention groups it was useful to check whether the comparative group achieved any significant improvement after three months of attending the current traditional reading programme. This was vital to determine whether any progress achieved by the treatment group was attributed to the application of the reading intervention programme or to something else.

6.3.1.4. Analysing the pre-post tests results of the comparative group

It is useful to remind the reader that the treatment group participants were exposed to a prepared reading intervention programme, while the comparative group participants were taught the traditional reading programme which was currently used by the Gharian English Department.

Descriptive analysis and statistical t-test analysis were conducted to evaluate whether any progress achieved by the comparative group was attributed to the application of the traditional programme. This included the analysis of the identification of conjunctions, the function recognition of conjunctions, and the participants' reading comprehension pre-and post-tests results.

6.3.1.4.1. Analysis of the identification of conjunctions pre-post tests results

The pre-test scores of the comparative group were averaged between 0 and 70. However, 80 per cent of them were located below 50. In frequency, five (33.33 per cent) participants scored between zero and 25 and five (33.33 per cent) scored between 35 and 40. Two (13.33 per cent) other participants scored between 45 and 50. Only three (20 per cent) participants managed to score between 60 and 70. On the other hand, about 50 per cent of the post-test scores were distributed between zero and 50 and the other scores were scattered along the frequency scale up till 90 as shown in Table 45 below.

Table 45 Pre-post tests scores of the identification of conjunctions of the comp. group

Scores	*Comparison group/ pre-test*		*Comparison group/ post-test*	
	Frequency	**Percentage**	**Frequency**	**Percentage**
25	5	33.33	4	26.66
30	0	00.0	1	6.66
35	2	13.33	0	00.0
40	3	20	1	6.66
45	0	00.0	0	00.0
50	2	13.33	0	00.0
55	0	00.0	1	6.66
60	1	6.66	3	20
65	1	6.66	0	00.0
70	1	6.66	2	13.33
75	0	00.0	1	6.66
80	0	00.0	1	6.66
85	0	00.0	0	00.0
90	0	00.0	1	6.66
Total	**15**	**100.0**	**15**	**100.0**

A close reading of the table above gives the impression that the participants in the comparative group achieved a marginal improvement in their post-test results compared to their pre-test results. This progress could be attributed either to the effect of the pre-test or to the close relationship the comparative group participants had with the participants of the treatment group, since both groups attended all other courses together. There was a possibility that the participants of the comparative group knew some information about the reading intervention programme from their treatment group classmates, even though, the actual focus of the intervention programme, i.e. using conjunctions in reading comprehension, was not mentioned to the treatment groups. Also participants were instructed not to give their handouts to the other group

6.3.1.4.2. Analysis of the function recognition of conjunctions pre-post tests results

The pre-test scores of the comparative group were largely between 30 and 55. Only four (26.66 per cent) participants exceeded 50. At the low level, six (40 per cent) participants scored between 25 and 30 and five (33.33 per cent) scored between 35

and 40. At the passing level, four (26.66 per cent) scored between 50 and 55. Very similar to this, the post-test scores were distributed between zero and 60. Only four (26.66 per cent) exceeded 50. At the low level, 11 (73.33 per cent) participants scored between zero and 40. At the passing level, one (6.66 per cent) got 55 and three (20 per cent) scored between 55 and 60.

Table 46 Pre-post tests results of the function recognition of conjunction of the comparative group

Scores	*Comparison group/pre-test*		*Comparison group/pots-test*	
	Frequency	**Percentage**	**Frequency**	**Percentage**
25	0	00.0	2	13.33
30	6	40	5	33.33
35	2	13.33	2	13.33
40	3	20	2	13.33
45	0	00.0	0	00.0
50	1	6.66	0	00.0
55	3	20	1	6.66
60	0	00.0	3	20
65	0	00.0	0	00.0
70	0	00.0	0	00.0
75	0	00.0	0	00.0
80	0	00.0	0	00.0
85	0	00.0	0	00.0
90	0	00.0	0	00.0
Total	**15**	**100.0**	**15**	**100.0**

As Table 46 above shows, the level and frequency of scores of the pre- and post-tests of the comparative group were approximately equal. No scores exceeded 60 and almost 90 per cent were distributed between 25 and 55. There was clear evidence that no important improvement was recorded in the function recognition of conjunctions between the pre and post-tests of the comparative group as illustrated by the shaded cells in the table above.

6.3.1.3.3. Analysis of reading comprehension pre-post tests results

Reading comprehension pre-test scores were distributed between zero to 55. In detail, five (33.33 per cent) participants scored between 25 and 30 and eight (53.33 per cent) had their scores between 35 and 45. Only two (13.33 per cent) exceeded 50

to be included between 50 and 55. Parallel to this, post-test scores were distributed between 25 and 55. Two (13.33 per cent) scored below 25 and nine (60 per cent) participants got between 35 and 40. The other four (26.66 per cent) exceeded 50.

Table 47 Reading comprehension pre-post tests results

Scores	*Comparative group/pre-test*		*Comparative group/post-test*	
	Frequency	**Percentage**	**Frequency**	**Percentage**
25	2	13.33	2	13.33
30	3	20	0	00
35	1	6.66	3	20
40	3	20	6	40
45	4	26.66	0	00
50	0	00.0	3	20
55	2	13.33	1	6.66
60	0	00.0	0	00
65	0	00.0	0	00
70	0	00.0	0	00
75	0	00.0	0	00
80	0	00.0	0	00
85	0	00.0	0	00
90	0	00.0	0	00
Total	**15**	**100.0**	**15**	**100.0**

It appeared from table 47 above that the reading comprehension pre and post-tests scores of the comparative group had the same level and distribution. No improvement was observed from the pre-test to the post-test as illustrated by the shaded cells.

To sum up, the descriptive analysis of the comparative group's pre and post-tests results revealed that either marginal or no improvement was observed between both tests. With the exception of the identification of conjunctions post-test results which recorded slight progress, the other two tests did not show any improvement.

6.3.1.4.4. Calculating means

Even though the above descriptive analysis revealed no clear improvement between the pre and post-tests results of the comparative group, further statistical analyses were conducted to be sure that there was no significant improvement.

Significance can be measured by conducting a t-test analysis which required the calculation of the mean and the standard deviation of the scores.

Table 48 Pre-post tests mean scores and standard deviations for the comparative group

Comparative group	*Identification of conjunction*		*Function Recognition of conjunction*		*Reading comprehension*	
	***X**	***SD**	**X**	**SD**	**X**	**SD**
Pre-test	38.73	19.67	36.53	11.05	38.66	10.25
Post-test	48.46	26.41	37.80	14.56	40.0	8.66
Difference	9.73		1.27		1.34	
Percent of progress	**25.12**		**3.47**		**3.46**	

As Table 48 shows, the means of the pre- and post-tests results of the identification of conjunctions were 38.73 and 48.46 respectively. The difference between them was 9.73 (i.e. 25.12 per cent). The standard deviations of both tests were high. As mentioned above, this might be attributed to the level of knowledge the participants had about the nature of conjunctions. It appeared that some participants heard about conjunctions and could identify some of them, while others had no idea about them.

The mean scores of the function recognition of conjunctions were calculated as 36.53 for the pre-test and 37.80 for the post-test. The difference was 1.27. The percentage of improvement was just 3.47.

The pre and post-tests mean scores of the reading comprehension were 38.66 and 40.0 respectively. The difference was computed to be 1.34. The improvement was only 3.46 per cent. This was a marginal difference and was not expected to represent a significant difference.

By calculating the means of the pre and post-tests results of the comparative group a t-test analysis was conducted to check whether or not the improvement observed above was statistically significant.

6.3.1.4.5. T-test analysis

A paired-samples t-test was selected to be used for this analysis since the comparison included the pre and post-tests results of the same comparative group. The null hypothesis here stated that "there was no significant difference between the means of the pre and post-tests results of the comparative group". The level of significance was chosen to be 0.05, as commonly used in social science.

6.3.1.4.6. T-test analysis of identification of conjunctions pre-post tests results

A paired-samples t-test was conducted to evaluate the impact of the traditional reading programme on the comparative group. There was a marginal statistically significant improvement in the identification of conjunctions from the pre-test (M= 38.73, SD = 19.67) to the post-test [M = 48.46, SD = 26.41; t (14) = -2.173, p = 0.047]. The magnitude of the differences in the means was large (eta squared = 0.25).

Table 49 T-test result of the identification of conjunctions pre-post tests results

Identification of conjunctions	*Mean*	*SD*	*T*	*P-value*
Comparative group/pre-test	38.73	19.67		
Comparative group/post-test	48.46	26.41	-2.173	0.047

The t-test analysis of the identification of conjunctions in the pre and post-tests results of the comparative group revealed that the t-value was -2.173 and the probability value was 0.047. This P- value was a little less than the threshold value of 0.05. There was a marginally significant difference between the mean scores of the

pre and post tests results of the comparative group. This required the null hypothesis stated above to be rejected.

6.3.1.4.7. T-test analysis of pre-post tests results of the function recognition of conjunctions

A paired-samples t-test was conducted to evaluate the impact of the traditional reading programme on the comparative group. There was no significant improvement in the function recognition of conjunctions from the pre-test (M = 36.53, SD = 11.35) to the post-test [M = 37.80, SD = 14.26; t (14) = -0.244, p = 0.810]. The magnitude of the differences in the means was very small (eta squared 0.004).

Table 50 T-test result of function recognition of conjunctions pre- post tests

Function recognition of conjunctions	*Mean*	*SD*	*T*	*P-value*
Comparative group/pre-test	36.53	11.35		
Comparative group/post-test	37.80	14.26	-.244	.810

T-test analysis of the function recognition of conjunctions of the pre and post-tests results of the comparative group revealed that the t-value was -0.244 and the probability value was 0.810. This P-value was bigger than the threshold value of 0.05. There was no significant difference between the means of the pre- and post-test scores of the comparative group. In other words, there was no evidence to reject the null hypothesis.

6.3.1.4.8. T-test analysis of reading comprehension pre- post-tests results

A paired-samples t-test was conducted to evaluate the impact of the traditional reading programme on the comparative group participants. There was no significant improvement in the reading comprehension from the pre-test (M = 38.66, SD = 10.25)

to the post-test [M = 40.0, SD = 8.66; t (14) = -0.459, p = 0.653]. The magnitude of the differences in the means was very small (eta squared 0.014).

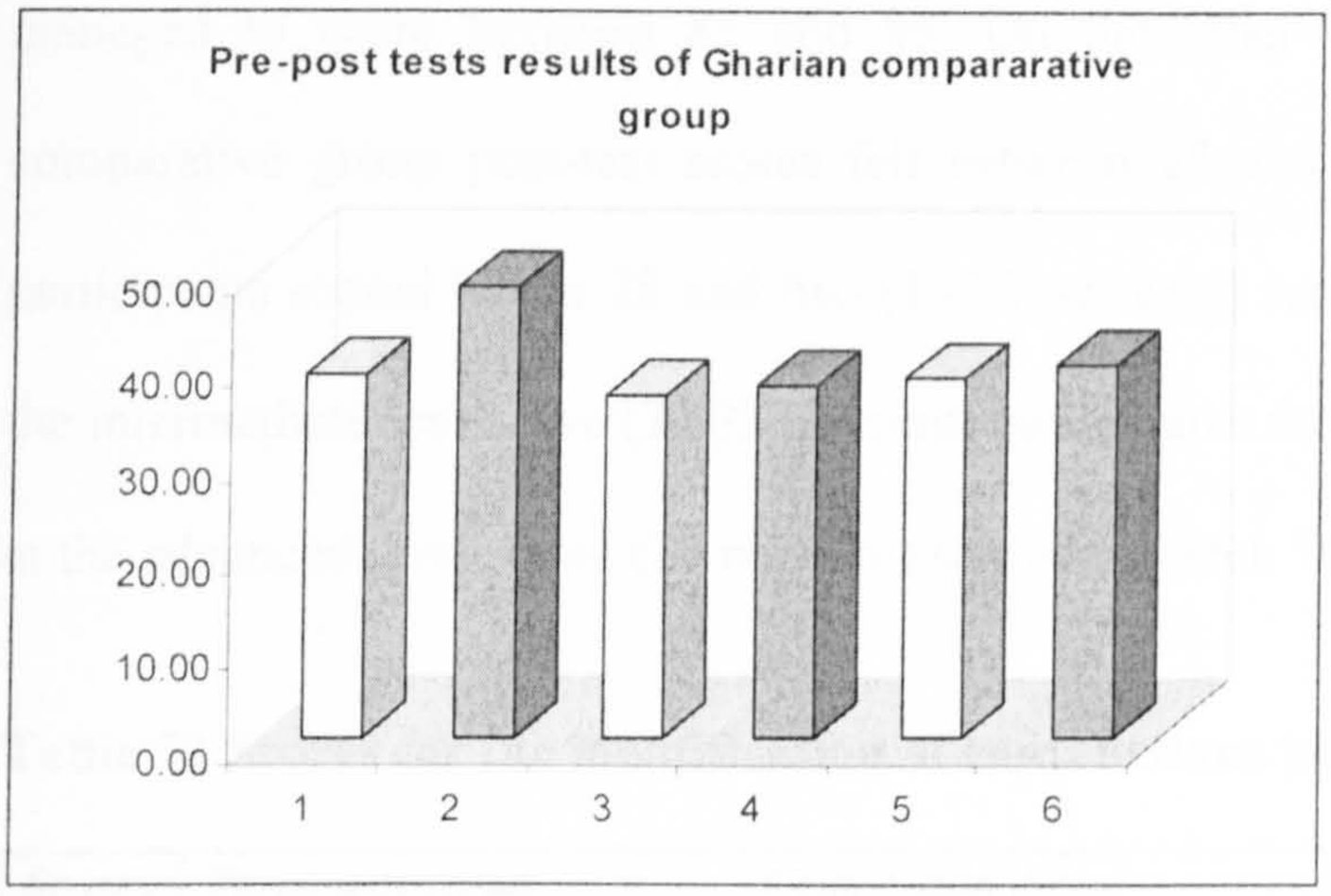
Table 51 T-test results of the reading comprehension pre-post tests results

Reading comprehension	*Mean*	*SD*	*T*	*P-value*
Comparative group/pre-test	38.66	10.25		
Comparative group/post-test	40.0	8.66	-.459	.653

The t-test analysis of the reading comprehension pre and post-tests results of the comparative group revealed that the t-value was -.459 and the probability value was 0.653. This P-value was bigger than the threshold value of 0.05 which suggested that there was no significant difference between the mean scores of the pre- and post-tests of the comparative group. There was no evidence to reject the null hypothesis.

In summary, the t-test analysis revealed that there were no significant differences between the pre and post-tests results of the comparative group with the exception of marginally significant differences recorded between the pre and post-tests scores for the identification of conjunctions. The difference between the threshold P-value chosen of 0.05 and the identification of conjunctions P-value was just 0.003. This analysis suggested that no significant improvement was recorded by the comparative group as a result of the application of the traditional reading programme, as illustrated in Figure 6 below.

Figure 6 Comparison between pre and post-test mean scores of the comp. group



At this stage of the analysis, it was found that there was no significant difference between the pre-test results of the treatment and comparative groups and no significant difference between the pre and post-tests results of the comparative group. The next stage of analysis explored the impact of the reading intervention programme on the treatment group. This was done by comparing the post-test results of the comparative group with the post-test results of the treatment group and later by comparing the pre-and post- tests results of the treatment group.

6.3.1.5. Analysing post-test results of treatment and comparison groups

After marking the papers of the post-test, scores were arranged in tables to be ready for further analysis. As an initial stage of analysis these raw data were classified into categories and descriptively analysed as follows.

6.3.1.5.1. Analysis of the identification of conjunctions post-test results

Compared to their pre-test performance, the treatment group participants achieved remarkable progress in the post-test with scores ranging between 70 and 95. Two (13.33 per cent) participants scored between 65 and 70 and eight (53.33 per cent)

scored between 75 and 80. At the distinction level, five (33.33 per cent) participants managed to score between 85 and 95. On the other hand, the majority of the comparative group post-test scores fell between 25 and 60. Four (26.66 per cent) participants scored below 25 and two (13.33 per cent) scored between 30 and 40. At the intermediate level, five (33.33 per cent) participants scored between 50 and 70 and at the advanced level, three (20 per cent) scored between 70 and 90.

Table 52 Scores for the identification of conjunctions post-test

Scores	*Treatment group*		*Comparison group*	
	Frequency	**Percentage**	**Frequency**	**Percentage**
25	0	00.0	4	26.66
30	0	00.0	1	6.66
35	0	00.0	0	00.0
40	0	00.0	1	6.66
45	0	00.0	0	00.0
50	0	00.0	0	00.0
55	0	00.0	1	6.66
60	0	00.0	3	20
65	0	00.0	0	00.0
70	2	13.33	2	13.33
75	3	20	1	6.66
80	5	33.33	1	6.66
85	0	00.0	0	00.0
90	4	26.66	1	6.66
100	1	6.66	0	00.0
Total	**15**	**100.0**	**15**	**100.0**

Even though 30 per cent of the comparative group participants scored below 50, it was observed that about 70 per cent of them scored over 50. This meant that the comparative group achieved considerable progress in comparison with their pre-test scores. As mentioned above, this progress could be attributed to their awareness of the importance of conjunctions in their English study. It was possible that this piece of information was conveyed to them by the participants of the treatment group.

As table 46 above shows, about 85 per cent of the treatment group scores were classified at the advanced level. This finding suggested that this progress could be

attributed to the explicit teaching of conjunctions which enabled them to identify conjunctions easily.

6.3.1.5.2. Analysis of the function recognition of conjunctions post-test results

Similar to the identification of conjunctions post-test results, 85 per cent of the treatment group scored between 60 and 80 in this post-test. At the low level, two (13.33 per cent) participants scored between 45 and 50. At the intermediate level, eight (53.33 per cent) participants scored between 60 and 75, and five (33.33 per cent) achieved between 80 and 85 to be classified at the advanced level. In contrast, about 60 per cent of the comparative group scores did not exceed 50 in the post-test. Two (13.33 per cent) participants scored below 25 and five (33.33 per cent) got between 25 and 30. Four (26.33 per cent) participants scored between 35 and 40, and the four (26.33 per cent) scored between 55 and 60, as shown in Table 53 below.

In this test, it was observed that the treatment group participants maintained the level of progress they had achieved in the previous test. The comparative group; however, failed to achieve the same level of progress. It could be concluded that learning to identify conjunctions was a comparatively easier task, but learning to recognise their semantic functions needed a special reading programme such as to the one given to the treatment group.

Table 53 Scores of function recognition of conjunctions post-test

	Treatment group/post-test		*Comparative group/post-test*	
	Frequency	**Percentage**	**Frequency**	**Percentage**
25	0	00.0	2	13.33
30	0	00.0	5	33.33
35	0	00.0	2	13.33
40	0	00.0	2	13.33
45	0	00.0	0	00.0
50	2	13.33	0	00.0
55	0	00.0	1	6.66
60	5	33.33	3	20
65	0	00.0	0	00.0
70	0	00.0	0	00.0
75	3	20	0	00.0
80	2	13.33	0	00.0
85	3	20	0	00.0
90	0	00.0	0	00.0
Total	**15**	**100.0**	**15**	**100.0**

6.3.1.5.3. Analysis of the reading comprehension post-test results

Scores obtained from a rational cloze multiple-choice test used for post-testing the reading comprehension of the intervention programme groups are presented in Table 54 below.

Maintaining approximately the same level of achievement as in other tests, about 50 per cent of the treatment group scores were above 50. Six (40 per cent) participants scored between 25 and 45 and two (13.33 per cent) scored just 50. In contrast, about 70 per cent of the comparative group participants scored below 50, and only four (26.66 per cent) scored between 50 and 60.

By comparing the level of achievement of both groups, it appeared that the treatment group performed better than the comparative group. Again, this finding suggested that the progress was achieved as a result of the explicit teaching of conjunctions and the way they are used to facilitate reading comprehension.

Table 54 Scores of reading comprehension post-tests

Scores	*Treatment group/post-test*		*Comparative group/ post-test*	
	Frequency	**Percent**	**Frequency**	**Percent**
25	1	6.66	2	13.33
30	0	00	0	00
35	0	00	3	20
40	1	6.66	6	40
45	4	26.66	0	00
50	2	13.33	3	20
55	4	26.66	1	6.66
60	1	6.66	0	00
65	1	6.66	0	00
70	0	00	0	00
75	1	6.66	0	00
80	0	00	0	00
85	0	00	0	00
90	0	00	0	00
Total	**15**	**100.0**	**15**	**100.0**

6.3.1.5.4. Calculating means

As shown in Table 55 below, the mean score for of the identification of conjunctions post-test of the treatment group was 79.60 and the mean for the comparative group was 48.46. The difference between them was calculated to be 31.14. This represented an average improvement of 64.25 per cent.

In addition, the mean score for the function recognition of conjunctions post-test of the treatment group was 67.73 and the score mean for the comparative group was 37.80. The difference was 29.93. The average level of progress was recorded at 79.17 per cent.

Finally, the mean score of the reading comprehension post-test of the treatment group was computed to be 51.0 and the mean score for the comparative group was 40.0. The difference was 11.0, representing an improvement of 27.5 per cent.

After calculating the means of the post-test scores of the intervention groups, a statistical t-test analysis was conducted to check the significance in the differences in post-test means.

Table 55 Mean and standard deviation of the intervention groups' post-tests scores

Intervention groups	*Identification of conjunctions*		*Function Recognition of conjunctions*		*Reading comprehension*	
	*X	*SD	X	SD	X	SD
Treat. GR.	79.60	26.41	67.73	12.28	51.0	11.52
Comp. GR.	48.46	7.78	37.80	14.56	40.0	8.66
Difference	31.14		29.93		11.0	
Percent of progress	64.25		79.17		27.5	

X = mean, SD =standard deviation

6.3.1.5.5. T-test analysis

A t-test was used to determine if there was any significant difference between the post-tests mean scores of the intervention groups. The null hypothesis of the case in hand stated that "there was no significant difference between the means of the post-test scores of the identification of conjunctions, function recognition of conjunctions and the reading comprehension of the study groups."

Since two independent group means were compared, a t-test for independent-samples was selected as the appropriate t-test analysis. The level of significance was chosen to be 0.05. The results of the statistical t-test analysis are presented as follows:

6.3.1.5.6. T-test analysis of identification of conjunctions post-test results

An independent-samples t-test was conducted to compare the post-test results of the treatment group with those of the comparative group. There was a statistically significant difference between the treatment group (M = 79.60, SD = 7.78) and the comparative group [M = 48.46, SD = 26.41; t (28) = 4.37, p = 0.000]. The magnitude of the differences in the means was very large (eta squared = 0.40).

Table 56 T-test result of the identification of conjunctions post-test results

Identification of conjunctions	*Mean*	*SD*	*T*	*P-value*
Comparative group	48.46	26.41	4.37	0.000
Treatment group	79.60	7.78		

As shown in the table above, the t-value was 4.37 and the probability value was 0.000. It was clear that the P-value was much less than the threshold value of 0.05. The difference between the means was considered to be statistically significant. In other words, the reading intervention programme appeared to have a highly significant impact on the conjunction identification in the treatment group. This result allowed the null hypothesis mentioned above to be rejected.

6.3.1.5.7. T-test analysis of the function recognition of conjunctions post-test result

An independent-samples t-test was used to compare the function recognition of conjunction post-test scores of the treatment group and those of the comparative group. There was a significant difference between the treatment group (M = 67.73, SD = 12.28) and the comparative group [M = 37.80, SD = 14.56; t (28) = 6.36, p = 0.000]. The magnitude of the difference in the means was very large (eta squared = 0.59).

Table 57 T-test result of the function recognition of conjunctions post-test results

Function recognition of conjunctions	*Mean*	*SD*	*T*	*P-value*
Comparative group	37.80	14.56	6.36	0.000
Treatment group	67.73	12.28		

Table 57 above shows that the t-value was 6.36 and the probability value was 0.000. It was obvious that the P-value was less than the chosen threshold value of 0.05. This meant that there was a marked significance between the means of the post-

tests results. In conclusion, the reading intervention programme appeared to have a significant impact on the recognition of the conjunctive function in the treatment group. Thus, again, the null hypothesis was rejected.

6.3.1.5.8. T-test analysis of the reading comprehension post-test results

An independent-samples t-test was conducted to compare the reading comprehension post-test score mean re of the treatment group and that of the comparative group. There was a significant difference between the treatment group (M = 51.00, SD = 11.52) and the comparative group [M = 40.00, SD = 8.66; t (28) = 2.955, p = 0.006]. The magnitude of the differences in the means was large (eta squared = 0.23).

Table 58 T-test result of reading comprehension post-test results

Reading comprehension	*Mean*	*SD*	*T*	*P-value*
Comparative group	40.00	8.66	2.95	0.006
Treatment group	51.00	11.52		

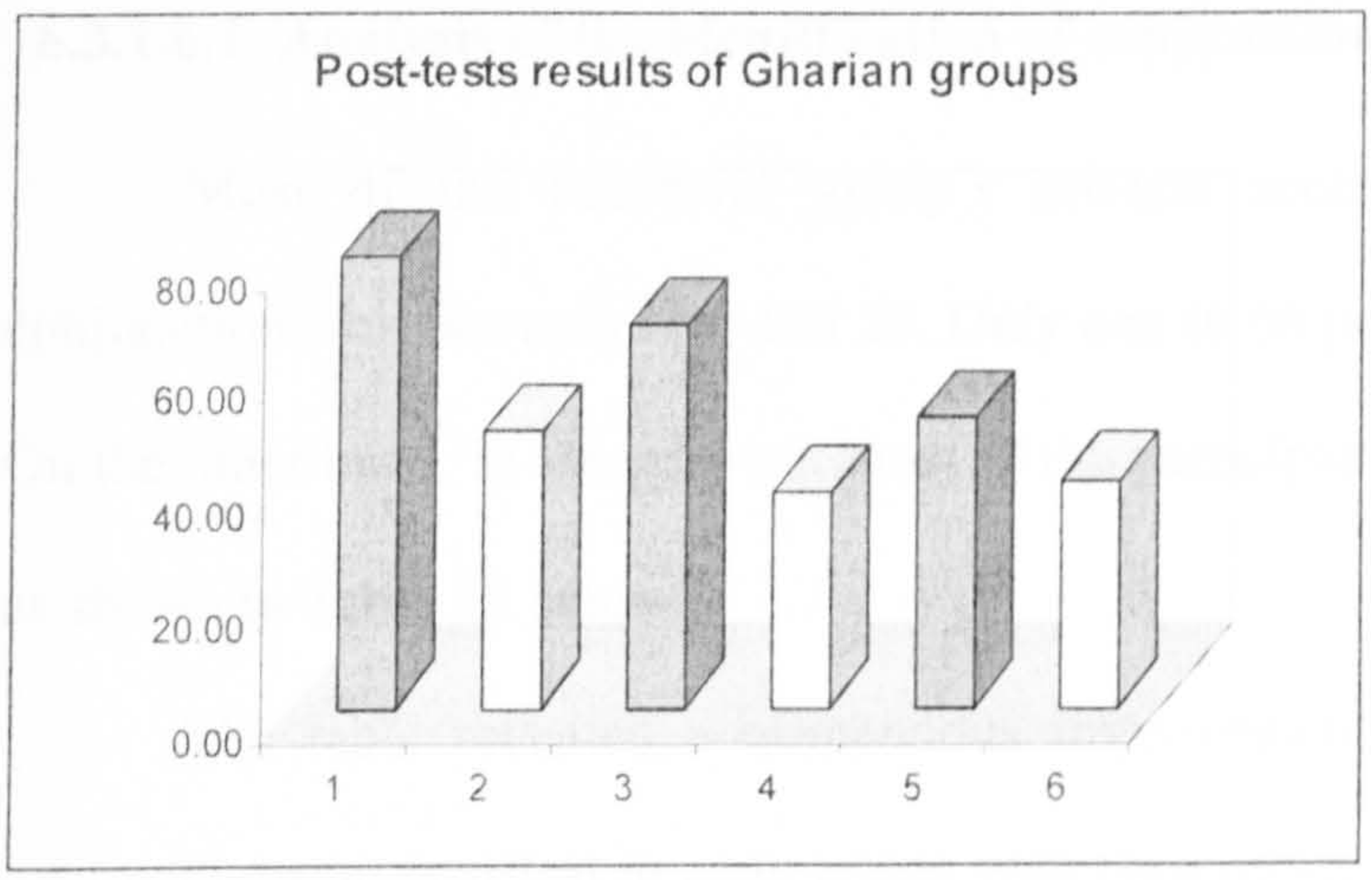
As shown in Table 58 above, the t-value was 2.95 and the probability value was .006. It was clear that the P-value was less than the selected threshold value 0.05 which meant that there was a statistical significant difference between the means of the analysed post-tests scores. This difference in favour of the treatment group could be attributed to the impact of the reading intervention programme.

In summary, the descriptive data obtained in the form of frequencies, percentages, and the means of the post-tests results of the intervention groups, supported by the results of the t-tests, suggested that the treatment group participants performed much better than those of the comparative group. It was suggested that the improvement of the treatment group was attributed to their attendance of the reading intervention programme. This significant progress was observed in the treatment

group's ability to identify conjunctions, recognise their semantic functions, and to read any expository text with satisfactory understanding, as illustrated in Figure 7 below.

However, it was observed that the treatment group's level of improvement was not similar in all the tested categories. For example, the treatment group participants achieved much better results in the identification of conjunctions post-test than in their reading comprehension test. The progress was recorded to be 64.25 per cent in the former test and 27.5 per cent in the latter.

Figure 7 Post-test results of Gharian Groups



Although it was found that the treatment group achieved significant progress in relation to the comparative group in all the post- tests administered, there was a need to analyse further the results of the pre- and post-tests of the treatment group to explore if the progress accomplished was also significant. This was to be sure that the progress achieved by the treatment group could be attributed to the reading intervention programme.

6.3.1.6. Analysing of the pre-post tests results of the treatment group

Pre-testing the treatment group and the comparative group revealed that both groups had equal proficiency in relation to the identification of conjunctions, the function recognition of conjunctions and their reading comprehension. However, after the treatment group participants were exposed to the explicit teaching of conjunctions significant progress had been achieved. To confirm this progress the pre and post-test scores of the treatment group were analysed further. Descriptive and t-test analysis were conducted to examine the level of achievement gained by the treatment group participants.

6.3.1.6.1. Analysis of the identification of conjunctions pre-post tests results

Most of the treatment group's pre-test scores for the identification of conjunctions fell between zero and 50. Only one (6.66 per cent) participant scored 65. On the other hand, in the post-test most of the participants scored between 70 and 95, as shown in Table 59 below.

The table revealed a tremendous improvement in the performance of the treatment group post-test in comparison with their pre-test scores. It was clear that the reading intervention programme had a positive impact on the participants' ability to identify the conjunctive items.

Table 59 Scores for the identification of conjunctions in pre-and post-tests

Scores	*Treatment group/pre-test*		*Treatment group/post-test*	
	Frequency	**Percentage**	**Frequency**	**Percentage**
25	5	33.33	0	00.0
30	3	20	0	00.0
35	0	00.0	0	00.0
40	2	13.33	0	00.0
45	2	13.33	0	00.0
50	2	13.33	0	00.0
55	0	00.0	0	00.0
60	0	00.0	0	00.0
65	1	6.66	0	00.0
70	0	00.0	2	13.33
75	0	00.0	3	20
80	0	00.0	5	33.33
85	0	00.0	0	00.0
90	0	00.0	4	26.66
100	0	00.0	1	6.66
Total	**15**	**100.0**	**15**	**100.0**

6.3.1.6.2. Analysis of the function recognition of conjunctions pre-post tests results

As shown in Table 60 below, the scores in the pre-test were distributed between zero and 50. Two (13.33 per cent) participants scored below 25 and 12 (80 per cent) scored between 30 and 40. Only one (6.66 per cent) participant scored 50. In contrast, participants' scores in their post-test ranged between 50 and 85. Two (13.33) participants scored between 45 and 50 and five (33.33 per cent) got 60. At the advanced level, eight (53.33 per cent) scored between 75 and 85.

Again, the participants of the treatment group managed to achieve remarkable progress in their ability to recognise conjunctive functions in comparison with their pre-test results.

Table 60 Function recognition of conjunctions score in pre-and post-tests

	Treatment group/pre-test		*Treatment group/post-test*	
	Frequency	**Percentage**	**Frequency**	**Percentage**
25	2	13.33	0	00.0
30	1	6.66	0	00.0
35	7	46.66	0	00.0
40	4	26.66	0	00.0
45	0	00.0	0	00.0
50	1	6.66	2	13.33
55	0	00.0	0	00.0
60	0	00.0	5	33.33
65	0	00.0	0	00.0
70	0	00.0	0	00.0
75	0	00.0	3	20
80	0	00.0	2	13.33
85	0	00.0	3	20
90	0	00.0	0	00.0
Total	**15**	**100.0**	**15**	**100.0**

6.3.1.6.3. Analysis of the reading comprehension pre-post tests results

It is suggested that the reading comprehension performance of the treatment group was directly influenced by the participants' ability to identify conjunctions and recognise the semantic functions they perform in written text. Any improvement in these factors could be reflected in the reading comprehension of the treatment group. This was examined in the following descriptive analysis.

As described above, scores of the reading comprehension pre-test for the treatment group were distributed between zero and 55. Briefly, six (40 per cent) participants scored below 30 and seven (46.66 per cent) scored between 35 and 50. Only two (6.66 per cent) participants scored between 50 and 55. On the other hand, the post-test scores witnessed important progress in comparison with the pre-test scores. For example, nine (60 per cent) participants scored above 50 and five (33.33 per cent) had scores between 40 and 55. One (6.66 per cent) participant scored 75 as shown in Table 61 below.

The descriptive data appearing in Table 55 below suggest that considerable improvement had been achieved by the treatment group participants after they were

explicitly taught how to use conjunctions in reading comprehension. Yet, it has to be recognised that the progress reported was not as high as that achieved in the two previous tests analysed above. This could be attributed to many reasons which will be highlighted in chapter seven.

Table 61 Scores of reading comprehension in pre-and post-tests

Scores	*Treatment group/pre-test*		*Treatment group/post-test*	
	Frequency	**Percentage**	**Frequency**	**Percentage**
25	4	26.66	1	6.66
30	2	13.33	0	00
35	1	6.66	0	00
40	2	13.33	1	6.66
45	1	6.66	4	26.66
50	3	20	2	13.33
55	2	13.33	4	26.66
60	0	00.0	1	6.66
65	0	00.0	1	6.66
70	0	00.0	0	00
75	0	00.0	1	6.66
80	0	00.0	0	00
85	0	00.0	0	00
90	0	00.0	0	00
Total	**15**	**100.0**	**15**	**100.0**

6.3.1.6.4. Calculating means

As shown in Table 62 below, the mean scores calculated for the pre-tests and post-tests of the treatment group were dramatically different, especially between those the identification of conjunctions and the function recognition of conjunctions tests. The means of the pre- and post tests for the identification of conjunctions were 32.46 and 79.60 respectively, and the difference between them was calculated to be 47.14. This meant that the improvement exceeded one hundred per cent, reaching 145.22 per cent.

In agreement with the previous results, the mean score of the function recognition of conjunctions pre-test was 34.60, while the post-test mean was 67.73. There was a substantial difference between the two means of 33.13, an increase of 95.75 per cent.

Table 62 Means and standard deviation of pre-and post-tests score of the treatment group

Treatment group	*Identification of conjunction*		*Function Recognition of conjunction*		*Reading comprehension*	
	*X	*SD	X	SD	X	SD
Pre-test	32.46	17.62	34.60	8.11	39.0	13.12
Post-test	79.60	7.78	67.73	12.28	51.0	11.52
Difference	**47.14**		**33.13**		**12.0**	
Percent of progress	**145.22**		**95.75**		**30.76**	

X=mean, SD=standard deviation

Finally, the mean of the reading comprehension pre-test was 39.0 and the mean of the post-test was 51.0. The difference was 12.0 representing a level of improvement calculated to be 30.76 per cent. This percentage improvement was not as high as the participants' improvement in their ability to identify conjunctions and recognise their function. The means and standard deviations calculated were used to examine the difference between the pre-and post test results statistically using a t-test.

6.3.1.6.5. T-test analysis

The t-test chosen to be used here was the paired-samples t-test. This t-test type is used "when you have only one group of people … and you collect data from them on two different occasions or under two different conditions" (Pallant, 2005, p.209). With the situation in hand there was only one group (i.e. the treatment group) which was pre-and post tested.

The null hypothesis in this case stated that "there was no significant difference between the performance of the treatment group in relation to the identification of conjunctions, function recognition of conjunctions, and in their reading comprehension before and after they exposed to the reading intervention programme." The level of significance was chosen to be 0.05 since this is the most commonly used value in educational research.

6.3.1.6.6. T-test analysis of identification of conjunctions pre-post tests results

A paired-samples t-test was conducted to evaluate the impact of the reading intervention programme on the treatment group participants. There was a statistically significant improvement in the identification of conjunctions from the pre-test (M = 32.46, SD = 17.62) to the post-test [M = 79.60, SD = 7.78; t (14) = -11.422, p = 0.000]. The magnitude of the difference in the means was very large (eta squared 0.90).

Table 63 T-test result of identification of conjunctions pre-post tests

Identification of conjunctions	*Mean*	*SD*	*T*	*P-value*
Treat. GR./pre-test	32.46	17.62		
Treat. Gr./ post-test	79.60	7.78	-11.422	0.000

The result of the t-test analysis revealed that the t-value was -11.422 and the probability value was 0.000. This P-value was less than the threshold value of 0.05. This meant that there was highly significant difference between the means of the pre and post-test scores of the treatment group. In other words, the progress achieved by the treatment group participants after they were exposed to the reading programme was remarkable. The null hypothesis stated above was therefore rejected.

6.3.1.6.7. T-test analysis of function recognition of conjunctions pre-and post test results

A paired-samples t-test was used to evaluate the impact of the reading intervention programme on the treatment group. There was a statistically significant improvement in the function recognition of conjunction from the pre-test (M = 34.60, SD = 8.11) to the post-test [M = 67.73, SD = 12.28; t (14) = -11.116, p = 0.000]. The magnitude of the difference in the means was very large (eta squared 0.89).

Table 64 T-test result of function recognition of conjunction pre-post tests

Function recognition of conjunctions	*Mean*	*SD*	*T*	*P-value*
Treatment group/ pre-test	34.60	8.11		
Treatment group/ post-test	67.73	12.28	-11.116	0.000

T-test analysis of the function recognition of conjunctions pre and post-test results of the treatment group indicated that the t-value was -11.116 and the probability value was 0.000. This P-value was less than the selected threshold value of 0.05. This showed that there was a significant difference between the means of the pre-and post test scores. The null hypothesis mentioned above was again rejected.

6.3.1.6.8. T- test analysis of reading comprehension pre-and post test results

A paired-samples t-test was conducted to evaluate the impact of the reading intervention programme on the treatment group participants. There was a statistically significant improvement in reading comprehension from the pre-test (M = 39.00, SD = 13.12) to the post-test [M = 51.00, SD = 11.52; t (14) = -4.230, p = 0.001]. The magnitude of the difference in the means was very large (eta squared 0.56).

Table 65 T-test result of reading comprehension pre-post- tests

Reading comprehension	*Mean*	*SD*	*T*	*P-value*
Treatment group/ pre-test	39.00	13.12		
Treatment group/post-test	51.00	11.52	-4.230	0.001

The t-test analysis of the reading comprehension pre-and post-test results of the treatment group gave a t-value was -4.230 and a probability value of 0.001. It was clear that this P-value was less than the chosen threshold value of 0.05. This result suggested that there was a significant difference between the means of the pre-post-and tests of the treatment group.

6.3.1.6.9. Summary

The t-test analysis results revealed that there was a significant improvement in the participants' ability to identify conjunctions after conducting the reading intervention programme with the Gharian treatment group. Therefore, this answers the thesis question which asked whether or not the treatment groups of the intervention programme can identify the items which function as conjunctions. The results suggested that after explicit teaching of conjunctions to the participants of the Gharian treatment group, their ability to identify conjunctions was significantly improved.

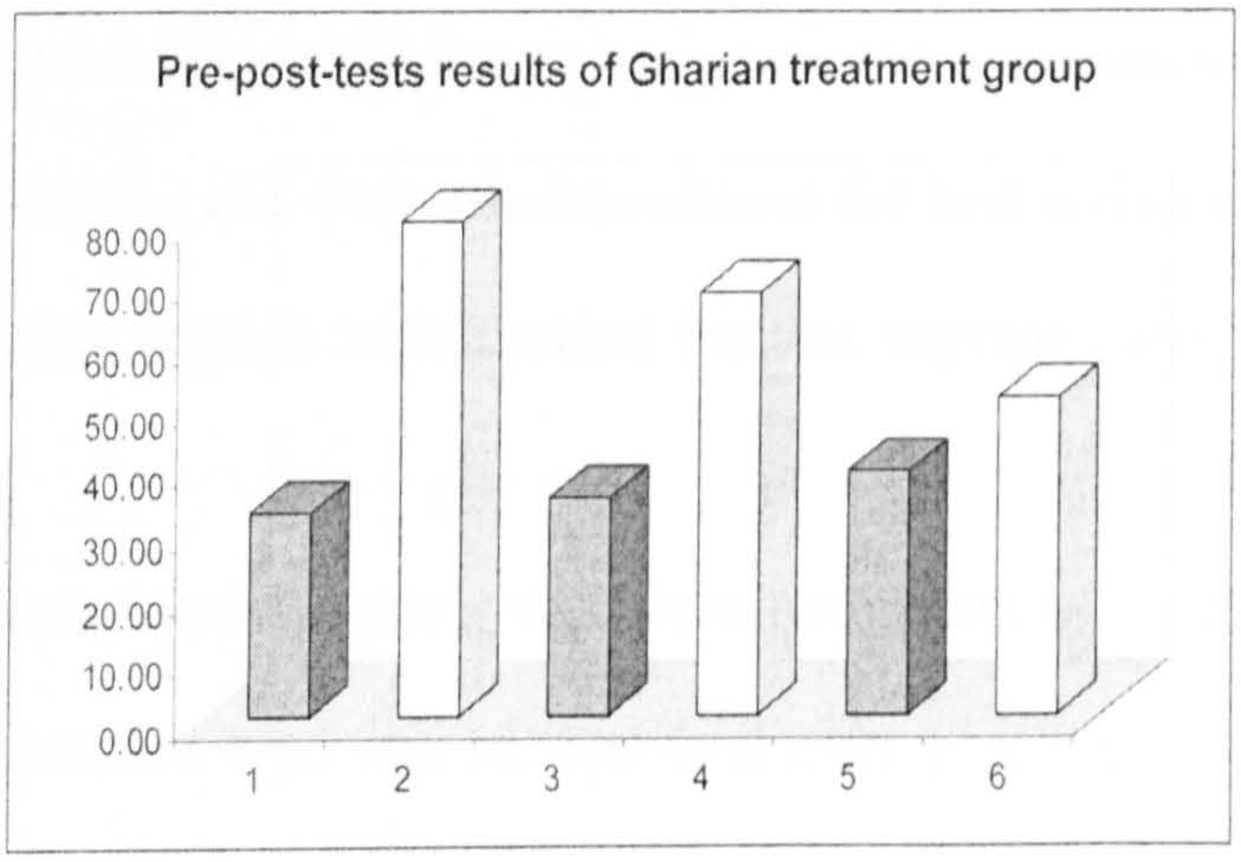
The second t-test analysis result suggested that there was a significant improvement in the treatment group participants' ability to recognise the function of conjunctions after they had attended the reading intervention programme. This progress came as a consequence of teaching the Gharian treatment group how to recognise the semantic relations which are signalled by conjunctions in written text.

Conjunctive functions as proposed by Halliday and Hasan (1976) (i.e. additive, adversative, causal, and temporal) were taught to the participants of the Gharian treatment group for three months. This result answered the thesis question which asked whether or not the participants of the intervention treatment groups were able to interpret the functions of conjunctions in written text correctly. There was enough evidence to suggest that the participants of the treatment groups in the Gharian English Department managed to recognise the functions of conjunctions after attending the reading intervention programme.

The third t-test analysis result revealed that the Gharian treatment group achieved significant progress in their reading comprehension post-test in comparison with their pre-test result and in comparison with the comparative group post-test results. As a result of the improvement gained in identifying conjunctions and

recognising their function the treatment group managed to use this knowledge in comprehending the expository written text given to them in the post-test. The major objective of the reading intervention programme was to train the participants in the treatment group how to use conjunctions in extracting meaning from written text and achieve satisfactory understanding. This significant achievement answered the thesis question which asked whether or not the ability to identify conjunctions and recognise their functions would facilitate the reading comprehension of Libyan university students. This finding suggested that the Gharian treatment group participants achieved significant progress by correctly answering most of the post-test reading comprehension questions, as illustrated in Figure 8 below.

Figure 8 Pre-post tests results of the Gharian intervention groups



At this point, it is worth noting that the improvement in the participants' reading comprehension was not as high as the improvement in their ability to identify conjunctions and recognise their semantic function. This could be attributed to a number of causes. Some of these may be related to the insufficient time allocated to the reading intervention programme. Other reasons could be related to the assumption

that some conjunctive types are more difficult to use in reading comprehension than others. These points are discussed in the next chapter.

6.3.1.7. Analysing the Gharian treatment group's reading comprehension post-test results in relation to conjunctive types

Halliday and Hasan (1976) divide conjunctive relations into four types. These are additives (the *and* group), adversatives (the *but* group), causals (the *so* group, and temporals (the *then* group). These relations can be made explicit by the presence of conjunctions such as *moreover, nevertheless, because*, and *finally* in a written text. These cohesive devices were carefully included in the expository text used for testing the reading comprehension of the study participants. Five items from each conjunctive type were selected from Halliday and Hasan's (1976) taxonomy because the cohesive theory these authors suggested was adopted as the theoretical framework for this study. The study participants were given three conjunctive options in the form of multiple-choice and were asked to choose the best option which was compatible with the semantic relation which joined the text segments and achieved coherence of the text.

Every correct answer was given two points which meant that the full mark for each conjunctive type was 10. The total mark possible in the test was 40 (i.e. 10, the full mark for each conjunctive type x 4, the number of conjunctive types = 40). The results for each conjunctive type were calculated separately, to allow the level of difficulty of each conjunctive type in comparison with the other types to be examined. The frequencies and percentages of conjunctive types scores are shown in Table 66 below.

Table 66 Conjunctive type scores of the Gharian post-test

Score Of 10	*Additive*		*Temporal*		*Causal*		*Adversative*	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
0	0	00.0	0	00.0	1	6.66	5	33.33
2	0	00.0	0	00.0	4	26.66	3	20
4	1	6.66	3	20	5	33.33	3	20
6	6	40	6	40	4	26.66	4	26.66
8	7	46.66	5	33.33	1	6.66	0	00.0
10	1	6.66	1	6.66	0	00.0	0	00.0
Total	15	100.0	15	100.0	15	100.0	15	100.0
Mean	7.06		6.53		4.0		2.8	
Percent	70.7		65.3		40.0		28.0	

Scores given for the correct additives ranged between four and ten. In detail, one (6.66 per cent) participant scores four scores out of ten and six (40 per cent) scored six out of ten. At the advanced level, seven (46.66 per cent) participants got eight out of ten and only one (6.66 per cent) scored ten. The mean of the scores was 7.06. Therefore the achievement for this conjunctive type was 70.7 per cent which was considered to be quite high.

The temporal scores also ranged between four and 10. One (6.66 per cent) participant scored four out of ten and six (40 per cent) scored six out of ten. At the high level, seven (46.66 per cent) participants managed to score eight out of ten and one (6.66 per cent) achieved full marks. The score means of this conjunctive type was 6.53. The average percentage of achievement in this test was 65.3 per cent which was classified as good.

The causal conjunctive scores were distributed between zero and eight. At the low level, one (6.66 per cent) participant scored zero and four (26.66 per cent) scored just two out of ten. At the same level, five (26.66 per cent) got four out of ten and four (26.66 per cent) managed to get six out of ten. At the high level, one (6.66 per cent) participant scored eight out of ten. The mean of the scores was four, (i.e. 40 per cent).

The adversative conjunctive scores were distributed between zero and six. It was observed that most of the participants failed to choose the correct adversative options. Eight (53.33 per cent) scored zero or two, and seven (46.66 per cent) participants scored four and or six out of ten. Nobody managed to score eight or 10. The mean was 2.8 (i.e. 28 per cent).

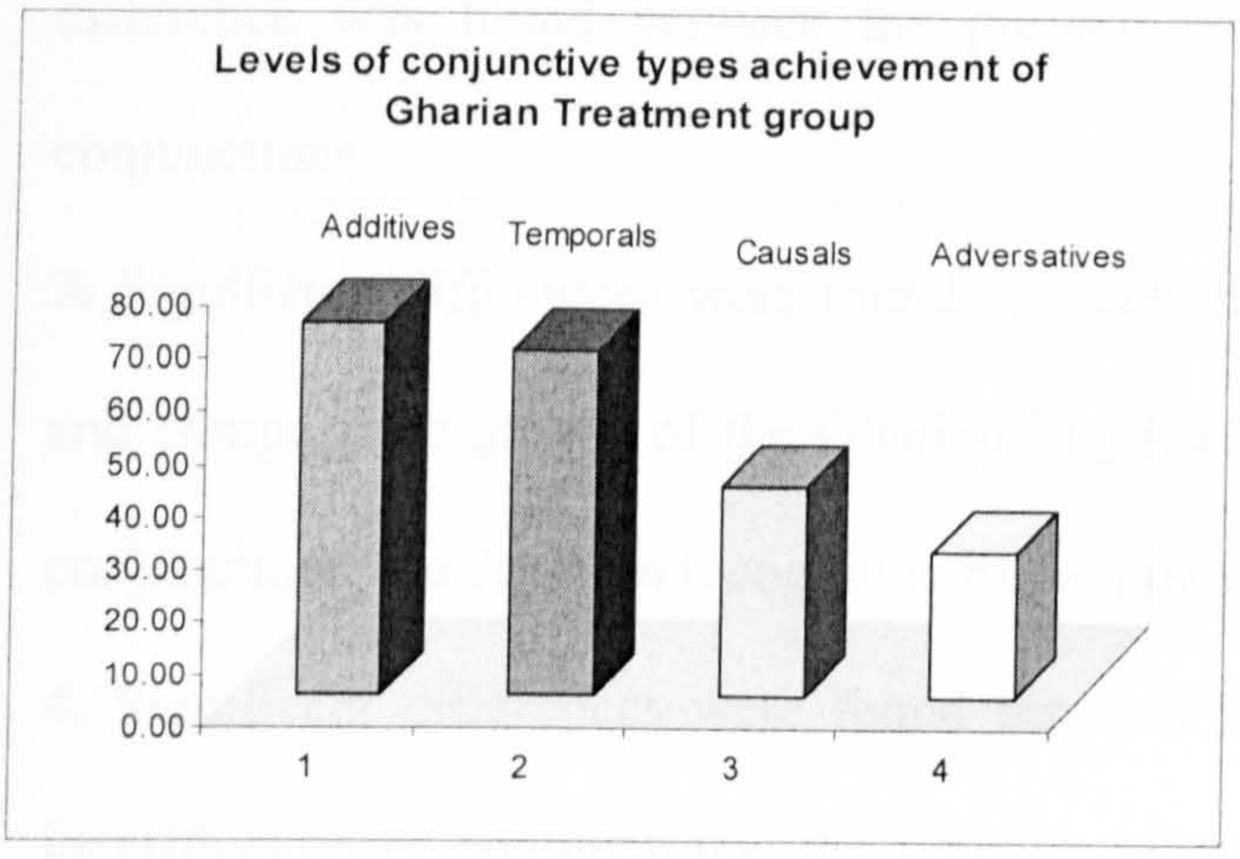
The mean scores for types of conjunctives were arranged in ascending in order to explore the highest and the lowest achievement. Assuming that the participants were able to score high marks with easy conjunctive type(s) and low marks with difficult conjunctive type(s), the following classification was suggested: easy, moderate, difficult, and very difficult conjunctive type(s). From the means of the conjunctive types obtained it was concluded that the additive conjunctives were the easiest and the adversative conjunctives were the most difficult. In between came the temporals which were classified as moderate and the causals as difficult as shown in Table 67 below.

Table 67 level of difficulty of conjunctive types

Level of difficulty	**Easy**	**Moderate**	**Difficult**	**Very difficult**
Conjunctive type	*additive*	*temporal*	*Causal*	*adversative*
Mean	7.06	6.53	4.0	2.8
Percent	70.7	65.3	40.0	28.0

Figure 9 below illustrates the level of difficulty the participants of the treatment group found with the conjunctive types. This result answered the question of whether or not some conjunctive types are more facilitative to reading comprehension than others. It was clear that the participants of the Gharian treatment group performed much better with the additive conjunctions. This was followed by the temporal conjunctions, then the causals, and the adversatives appeared to be difficult.

Figure 9 Classifying conjunctive types according to their level of difficulty



These findings were in agreement with those of many studies which have found that the additive conjunctions are the easiest and the adversatives are the most difficult ones for foreign language readers (Goldman and Murray 1992, Ozono and Ito 2003). This will be discussed in the following chapter.

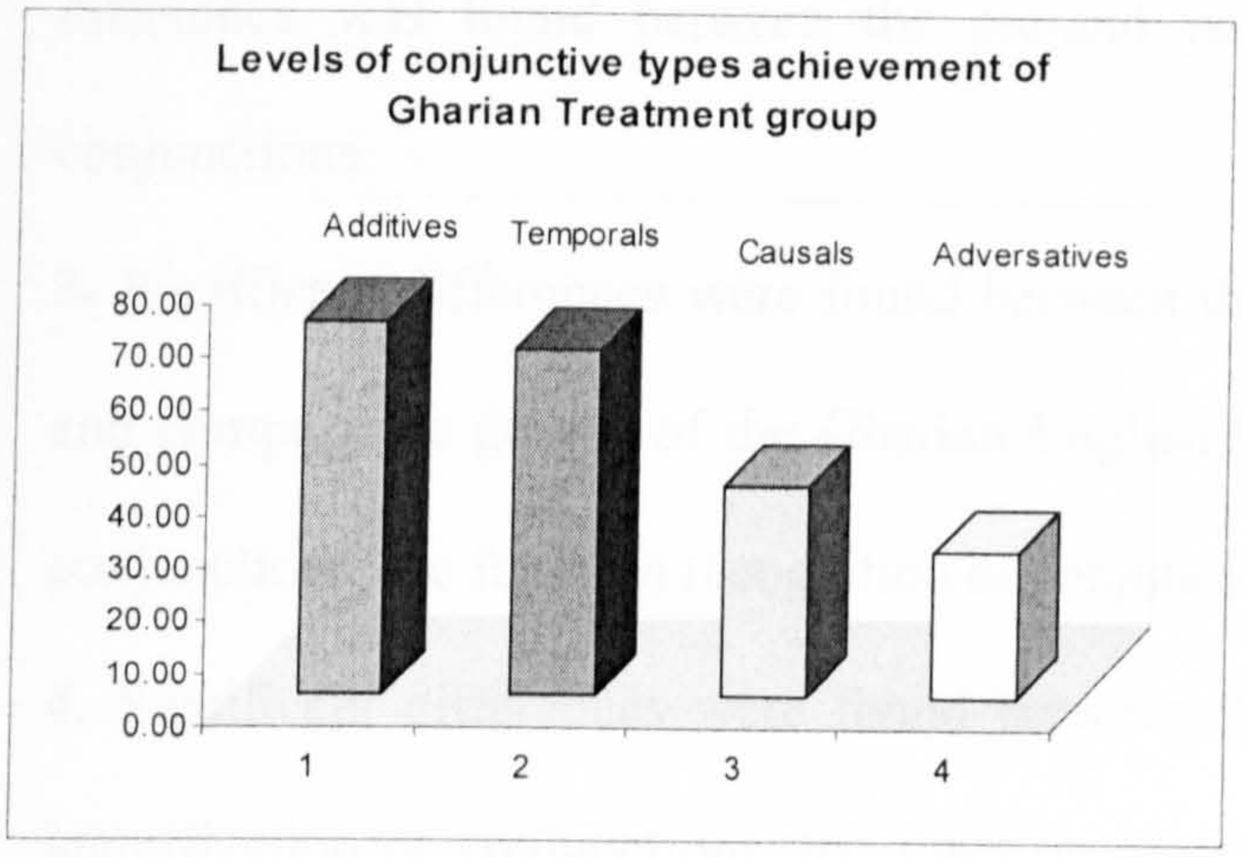
6.3.1.8. General Summary

The data collected by pre and post-testing the Gharian treatment and comparative groups were classified and arranged into categories to be ready for further analysis. This was followed by descriptive analysis of the available data. The description took the form of frequencies, percentages, and means. Finally, statistical t-test analyses were conducted to check the significance of differences between the pre and post-test results of the study groups. This analysis generated the following results:

1. No significant difference was found between the pre-tests results for the identification of conjunctions, the function recognition of conjunctions and reading comprehension in the treatment and comparative groups of the Gharian English Department.

2. No significant difference was found between the function recognition of conjunctions or reading comprehension pre-and post-test results of the comparative

Figure 9 Classifying conjunctive types according to their level of difficulty



These findings were in agreement with those of many studies which have found that the additive conjunctions are the easiest and the adversatives are the most difficult ones for foreign language readers (Goldman and Murray 1992, Ozono and Ito 2003). This will be discussed in the following chapter.

6.3.1.8. General Summary

The data collected by pre and post-testing the Gharian treatment and comparative groups were classified and arranged into categories to be ready for further analysis. This was followed by descriptive analysis of the available data. The description took the form of frequencies, percentages, and means. Finally, statistical t-test analyses were conducted to check the significance of differences between the pre and post-test results of the study groups. This analysis generated the following results:

1. No significant difference was found between the pre-tests results for the identification of conjunctions, the function recognition of conjunctions and reading comprehension in the treatment and comparative groups of the Gharian English Department.

2. No significant difference was found between the function recognition of conjunctions or reading comprehension pre-and post-test results of the comparative

groups of the Gharian English Department. However, a marginally significant difference was found between the pre-and post-test results for identification of conjunctions.

3. Significant differences were found between the post-tests results of the treatment and comparative groups of the Gharian English Department for the identification of conjunctions, the function recognition of conjunctions and reading comprehension.

4. Significant differences were found between the pre-and post-test results for the identification of conjunctions, the function recognition of conjunctions and reading comprehension of the treatment group of the Gharian English Department.

Table 68 Summary of t-test analyses results

Intervention groups	*Number of tests*	*Test topic*	*T-test result*
Treatment & Comparative group	Pre- test	Identification of conjunctions	No significant differences
		Function recognition of conjunctions	
		Reading comprehension	
Comparative group	Pre-post test	Identification of conjunctions	Sigt. difference
		Function recognition of conjunctions	No significant differences
		Reading comprehension	
Treatment group	Pre-post test	Identification of conjunctions	Significant differences
		Function recognition of conjunctions	
		Reading comprehension	
Treatment & Comparative group	Post-test	Identification of conjunctions	
		Function recognition of conjunctions	
		Reading comprehension	

5. The reading comprehension post-test results of the treatment group were analysed with reference to conjunctive types. Every conjunctive type score was categorized and described in the form of a frequency, percentage, and mean. That was followed by classifying the conjunctive types according to their level of difficulty. The analysis revealed that the additive conjunctions were the most facilitative conjunctive type for reading comprehension while the adversatives were the most difficult. In between

came the temporals and the causals in the second and third level of difficulty respectively, as Table 68 above shows.

By this point the thesis questions mentioned above were answered by the data collected from the Gharian English Department. However, due to the possible negative effect of pre-testing, and the small number of participants in the Gharian intervention programme, another intervention programme was organized in the Sabrata English Department. In this programme, a large number of participants were available and only-post-test intervention was applied. In the next section, data collected by post-testing the Sabrata English Department intervention groups are analysed.

6.3.2. Data analysis of the Sabrata intervention programme

6.3.2.1. Analysing the post-test results of the treatment and comparative groups

In any intervention programme which includes pre-and post-testing of the treatment and comparative groups, the pre-test could affect the validity of the post-test results (Bryman 1989). There is a possibility that the participants who attended the pre-test could keep in mind useful information and benefit from that in the post-test which is usually identical to the pre-test. This possibility increases if the interval between the pre-test and the post-test is short.

In the first intervention programme of this study the interval between pre-post tests was three months, which was considered long enough for the participants to forget about the pre-test content. However, it was decided to conduct another intervention in another English department with only a post-test experiment, as recommended by Bryman (1989).

Data obtained from this intervention programme allowed for a comparison between the achievements of the Gharian treatment group and the Sabrata treatment

group. Any similarity in their achievement would suggest that the measuring instruments used were reliable and that the application of the reading programme had the same level of effectiveness irrespective of testing regime.

The treatment and comparative groups in the Sabrata English Department were post-tested at the end of the reading intervention programme which was explicitly taught to the treatment group. Identifying conjunctions, recognizing their semantic function and using them in reading comprehension were the topics of the post-test questions. The scores from the post-tests were classified in categories and descriptively analysed as follows:

6.3.2.1.1. Analysis of the identification of conjunctions post-test results

Most of the comparative group test scores were distributed between 25 and 50. Only a few participants achieved scores above 50. In frequency, 17 (48.57 per cent) participants scored between zero and 25, and six (17.14 per cent) scored between 30 and 35 and five (14. 28 per cent) scored between 35 and 50. At the advanced level, five (14.28 per cent) participants scored between 75 and 85. In comparison, most of the treatment group post-test scores averaged between 70 and 90. Only a handful of cases had their scores below 50. Five (14.28 per cent) scored between 40 and 50, and 10 (28.57 per cent) participants scored between 55 and 70. At the advanced level, 20 (57.14 per cent) participants managed to score between 75 and 90, as Table 69 below shows.

Table 69 Scores for identification of conjunctions post-test

Scores	*Treatment group*		*Comparative group*	
	Frequency	Percentage	Frequently	Percentage
25.00	0	00.0	17	48.57
30.00	0	00.0	5	14.28
35.00	0	00.0	1	2.85
40.00	3	8.57	2	5.71
45.00	0	00.0	0	00.0
50.00	2	5.71	4	11.42
55.00	2	5.71	0	00.0
60.00	5	14.28	1	2.85
65.00	0	00.0	0	00.0
70.00	3	8.57	0	00.0
75.00	6	17.14	2	5.71
80.00	9	25.71	2	5.71
85.00	0	00.0	1	2.85
90.00	5	14.28	0	00.0
Total	**35**	**100.0**	**35**	**100.0**

As shown in Table 69 above, about 80 per cent of the comparative group participants received scores below the pass category with only a few cases managing to get high scores. In comparison, about 70 per cent of the treatment group participants scored above 70. It was clear that the treatment group performed much better in the identification of conjunctions than the comparative group, which could be attributed to the application of the reading intervention programme.

6.3.2.1.2. Analysis of the function recognition of conjunctions post-test results

The post-test scores of the comparative group were ranged from 25 to 60. Only one participant exceeded 75. Eight (22.86 per cent) scored between zero and 25, and 13 (37.14 per cent) had scores between 30 and 35. At the same low level, another three (8.57 per cent) participants scored between 35 and 40. At the passing level, 10 (28.57 per cent) got scores between 50 and 60, and at the advanced level one (2.85 per cent) participant scored 80. In contrast, most of the post-test scores of the treatment group were between 55 and 90. Only four (11.42 per cent) participants did not pass

50. At the low level, four (11.42 per cent) scored between 30 and 40 and two (5.71 per cent) scored between 45 and 50. At the higher level, 14 (40 per cent) participants scored between 60 and 70, and at the advanced level 14 (40 per cent) scored between 75 and one hundred.

By comparing the level of achievement of the groups it was concluded that the treatment group performed better than the comparative group in the function recognition of conjunctions post-test, as shown in Table 70 below.

Table 70 Scores of function recognition of conjunctions post-test in category

Scores	*Treatment group*		*Comparison group*	
	Frequency	**Percentage**	**Frequently**	**Percentage**
25.00	0	00.0	8	22.86
30.00	1	2.85	11	31.43
35.00	1	2.85	2	5.71
40.00	2	5.71	3	8.57
45.00	0	00.0	0	00.0
50.00	2	5.71	7	20
55.00	1	2.85	0	00.0
60.00	6	17.14	3	8.57
65.00	0	00.0	0	00.0
70.00	8	22.86	0	00.0
75.00	4	11.42	0	00.0
80.00	5	14.28	1	2.85
85.00	2	5.71	0	00.0
90.00	2	5.71	0	00.0
100	1	2.85	0	00.0
Total	**35**	**100.0**	**35**	**100.0**

6.3.2.1.3. Analysis of reading comprehension post-test results

The ability of the treatment group to identify conjunctions and recognize their semantic functions were reflected in their reading comprehension achievement. The scores of the treatment group post-test ranged between 25 and 90. At the low level 11 (31.42 per cent) participants had scores between 25 and 45, and at the passing level, 11 (31.42 per cent) achieved scores between 50 and 60. At the higher level, six (17.14 per cent) participants scored between 65 and 70, and at the advanced level, seven (20

per cent) managed to score between 75 and 90. In contrast, the post-test scores of the comparative group ranged between 25 and 60. Eight (22.86 per cent) participants had scores between 25 and 35, and 18 (51.42 per cent) got scores between 40 and 45. At the passing level, six (17.14 per cent) scored 50. Only three (8.57 per cent) participants managed to score between 55 and 60.

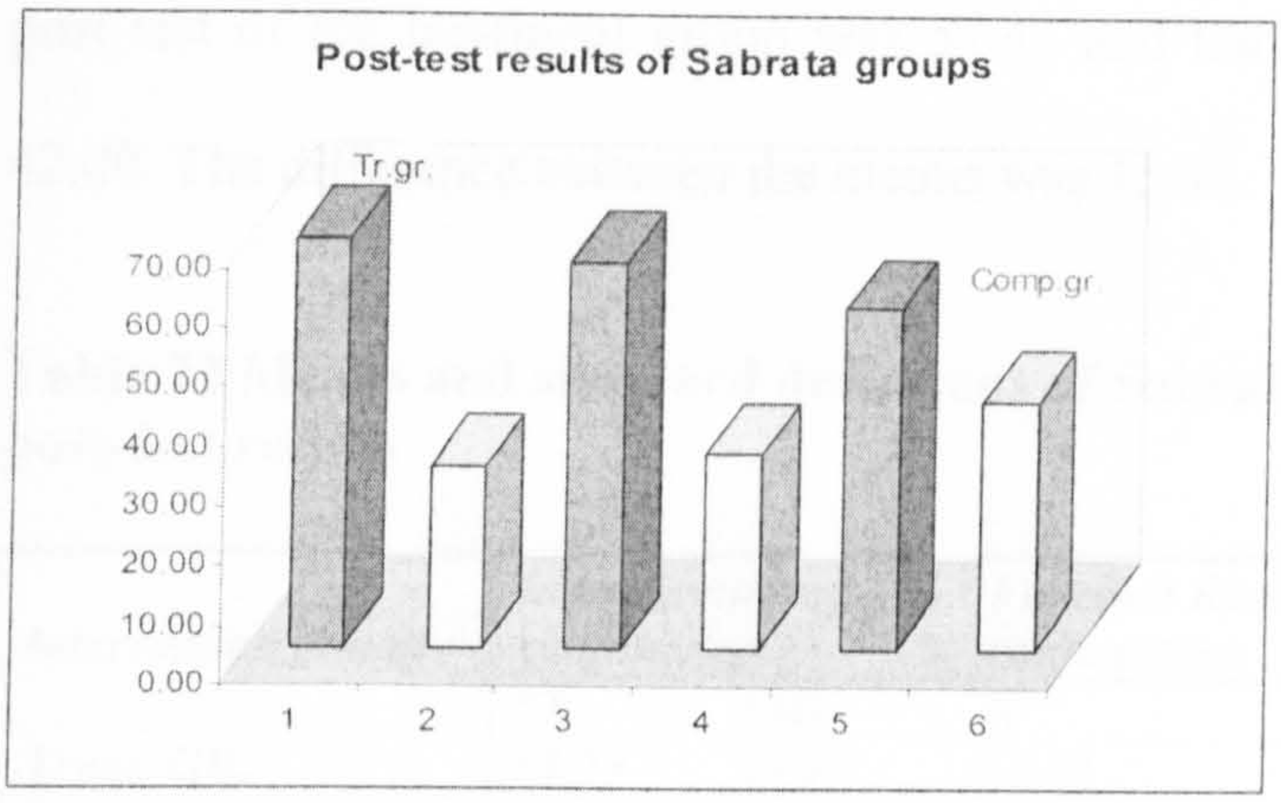
Table 71 Scores of reading comprehension post-test in category

Scores	*Treatment group*		*Comparative group*	
	Frequency	**Percentage**	**Frequently**	**Percentage**
25.00	1	2.85	2	5.71
30.00	0	00.0	3	8.57
35.00	2	5.71	3	8.57
40.00	5	14.28	9	25.71
45.00	3	8.57	9	25.71
50.00	2	5.71	6	17.14
55.00	5	14.28	2	5.71
60.00	4	11.42	1	2.85
65.00	4	11.42	0	00.0
70.00	2	5.71	0	00.0
75.00	3	8.57	0	00.0
80.00	1	2.85	0	00.0
85.00	2	5.71	0	00.0
90.00	1	2.85	0	00.0
Total	**35**	**100.0**	**35**	**100.0**

As Table 71 above shows, more than 85 of the comparative group participants achieved scores below the pass level and only a few cases succeeded in getting high scores, whereas about 70 per cent of the treatment group scored above the pass level with low scores in only a few cases.

This initial descriptive analysis suggested that there were differences between the performance of the two groups in favour of the treatment group. The treatment group participants performed better in their ability to identify conjunctions (ID), recognize their semantic function (FR), and in their ability to extract meaning from expository text (RC), as Figure 10 below illustrates.

Figure 10 Post-test results of the intervention groups in Sabrata



In order to explore whether the differences between the intervention groups' post-tests results were statistically significant the mean scores were calculated and t-test analysis was conducted.

6.3.2.1.4. Calculating means

The post-test scores of the treatment and the comparative groups were entered in to Microsoft Excel for calculating means and the analysis gave the following results.

The identification of conjunctions post-test mean score of the treatment group was 68.97 and that of the comparative was 30. 62. The difference between the means was 38.35. The standard deviation of comparative group score test was high. As mentioned above, this might be attributed to the level of knowledge the participants in this group had about the nature of conjunctions from their colleagues in the treatment group. It appeared that some participants heard about conjunctions and could identify some of them, while others had no idea about them.

The function recognition of conjunctions post-test mean score of the treatment group was 65.02 and for the comparative group was 32.74. The difference between the means was 32.28.

As shown in Table 72 below, the mean score of the reading comprehension post-test of the treatment group was 57.42 and that for the comparative group was 42.00. The difference between the means was 15.42.

Table 72 Means and standard deviations of Sabrata intervention groups' only-post-test results

Intervention groups	*Identification of conjunctions*		*Function Recognition of conjunctions*		*Reading comprehension*	
	*X	*SD	X	SD	X	SD
Treat. GR.	68.79	14.57	65.02	16.09	57.42	16.05
Comp. GR.	30.62	24.89	32.74	18.28	42.0	9.00
Difference	**38.35**		**32.28**		**15.42**	
Percent of progress	**125.24**		**98.59**		**36.71**	

6.3.2.1.5. T-test analysis

The differences between the post-test mean scores as calculated above could be minor differences with no implications for the level of the intervention groups' progress, or they could be statistically significant and thus have consequences for the research outcome. A t-test analysis is the appropriate statistical measurement used to check the significance of the results.

Since the analysis involved two independent groups, the independent-samples t-test was chosen to be used here. The null hypothesis in this analysis stated that "there were no significant differences between the means of the post-test results of the identification of conjunctions, function recognition of conjunctions and in the reading comprehension of the Sabrata intervention groups". The level of significance was selected to be 0.05 as commonly used in educational research. The t-test statistical analysis gave the following results:

6.3.2.1.6. T-test analysis of identification of conjunctions post-test results

An independent-samples t-test was conducted to compare the post-test results of the treatment group and those of the comparative group in the Sabrata intervention programme. There was a statistically significant difference between the post-test results of the treatment group (M = 68.97, SD = 14.57) and those of the comparative group [M = 30.62, SD = 24.89; t (68) = 7.86, p = 0.000]. The magnitude of the differences in the means was very large (eta squared = 0.47).

Table 73 T-test result of identification of conjunctions post-test results

Identification of conjunctions	*Mean*	*SD*	*T*	*P-value*
Comparative group	30.62	24.89	7.86	0.000
Treatment group	68.97	14.57		

As shown in Table 73 above, the t-value was 7.86 and the probability value was 0.000 which meant that the P-value was less than the threshold value of 0.05. The difference between the means was considered to be strongly statistically significant. In other words, the reading intervention programme had a great impact on the identification of conjunctions in the treatment group. This result allowed the null hypothesis mentioned above to be rejected.

6.3.2.1.7. T-test analysis of the function recognition of conjunctions post-test results

An independent-samples t-test was used to compare the function recognition of conjunctions post-test scores of the treatment group and those of the comparative group. There was a significant difference between the post-test scores of the treatment group (M = 65.02 SD = 16.09) and those of the comparative group [M = 32.74, SD =

18.22; t (68) = 7.85, p = 0.000]. The magnitude of the differences in the means was very large (eta squared = 0.48).

Table 74 T-test result of function recognition of conjunctions post-test scores

Function recognition of conjunctions	*Mean*	*SD*	*T*	*P-value*
Comparative group	32.74	18.22	7.85	0.000
Treatment group	65.02	16.09		

Table 74 above shows that the t-value was 7.85 and the probability value was 0.000. It was obvious that the P-value was lower than the chosen threshold value of 0.05. This meant that there was a highly significant difference between the means of the post-tests results. In conclusion, the reading intervention programme had a significant impact on the recognition of the conjunctive function in the treatment group. Thus, again, the null hypothesis was rejected.

6.3.2.1.8. T-test analysis of the reading comprehension post-test results

An independent-samples t-test was conducted to compare the reading comprehension post-test results of the treatment group and those of the comparative group. There was a significant difference between the post-test results of the treatment group (M = 57.42, SD = 16.05) and those of the comparative group [M = 42.00, SD = 9.00; t (68) = 4.95, p = 0.000]. The magnitude of the differences in the means was large (eta squared = 0.19).

Table 75 T-test result of the reading comprehension post-test results

Reading comprehension	*Mean*	*SD*	*T*	*P-value*
Comparative group	42.00	9.00	4.95	0.000
Treatment group	57.42	16.05		

The information presented in Table 75 above revealed that the t-value was 4.95 and the probability value was 0.000. The P-value was less than the selected

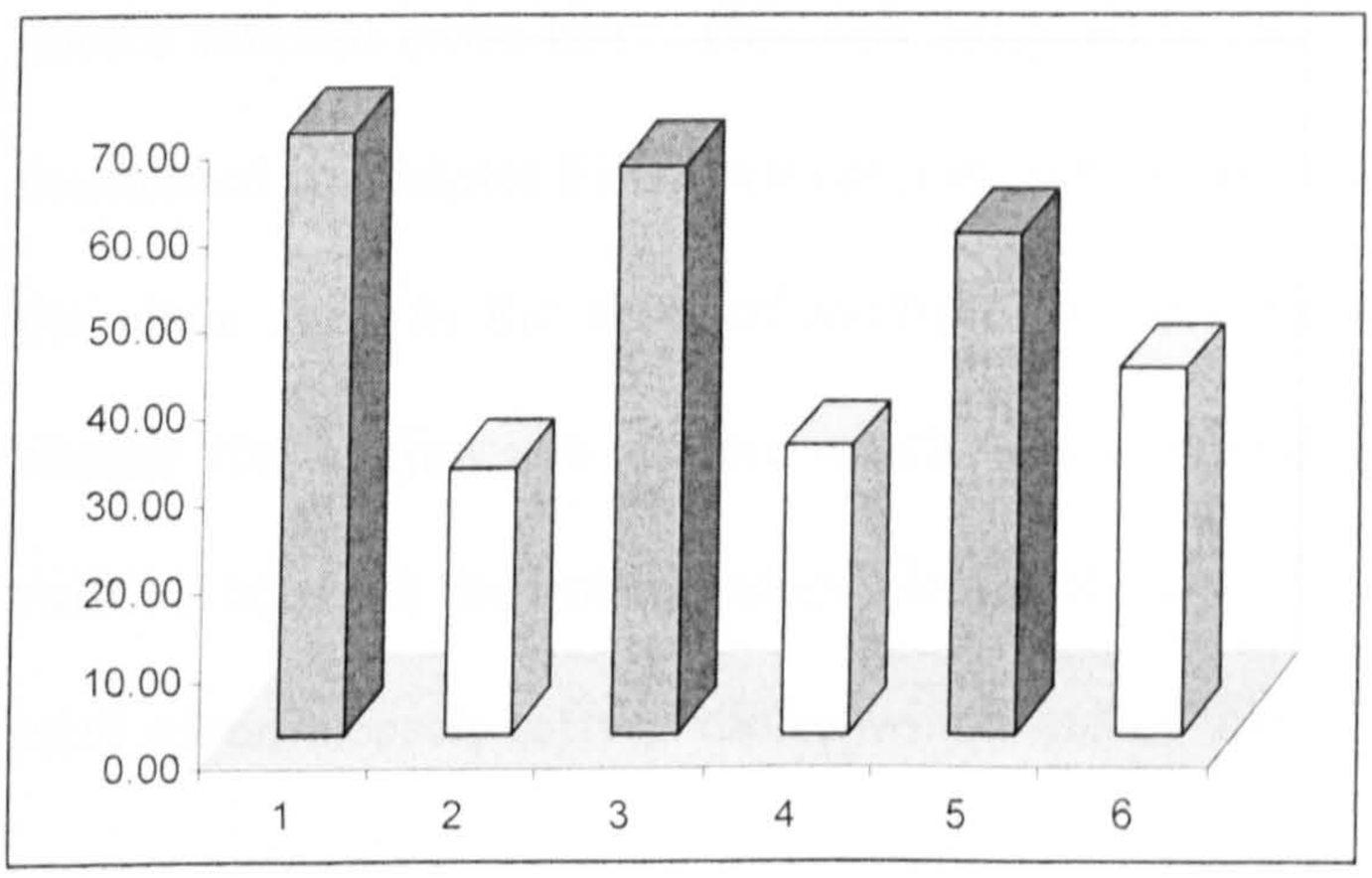
threshold value of 0.05 which meant that there was a statistical significant difference between the means of the analysed post-tests scores. In other words, there was a statistically evidence that the study groups means differed. In conclusion, it is suggested that the reading intervention programme had a significant impact on the reading comprehension of the treatment group.

6.3.2.1.9. Summary

The descriptive and t-test analysis of identification of conjunctions, function recognition of conjunctions and reading comprehension post-test results of the Sabrata intervention groups revealed that there were remarkable differences between the test results of the study groups. The treatment group achieved better results in the three tests in comparison with the comparative group as illustrated in Figure 11 below.

These findings gave clear evidence that the treatment group succeeded in recording significantly higher scores in all tests. It was suggested that these significant achievements were attributed to the participants' attendance of the reading intervention programme, which lasted for twelve weeks. The explicit teaching of conjunctions and the way they were used to extract meaning from expository written texts had a considerable impact on the performance of the treatment group.

Figure 11 Post-test results of Sabrata groups



The level of this effect, however, varied between the tests. It was observed that the identifying conjunctions test had the highest scores, with an average of 68.75, and the function recognition of conjunctions test came next with an average score of 65.80. Nevertheless, the participants in the treatment group did not manage to maintain the same high level of performance in their reading comprehension test. The reading comprehension test average score of 55.88 was a considerable achievement but it was not as high as those in the other tests. Possible reasons behind the different levels of achievement will be discussed in the next chapter.

These findings are in agreement with the Gharian intervention programme results, supporting the answers to the thesis questions mentioned above. As a contribution to answering the thesis question, which asked about the difficulty of different conjunctive types in relation to reading comprehension, it was decided to analyse the reading comprehension test results of the Sabrata treatment groups with reference to the conjunctive types.

6.3.2.2. Analysis of the Sabrata treatment group reading comprehension post-test results with reference to conjunctive types

The reading comprehension measuring instrument used was the "multiple-choice rational cloze test". This was designed to include four conjunctive types. As mentioned in Chapter Five, five conjunctions from each type were chosen to occupy the cloze slots in the form of multiple-choice options. Examinees were asked to choose the conjunctive option which was compatible with the semantic relation existing between the linked independent sentences of an expository text. Two points were given to each correct choice which meant that every conjunctive type had ten

possible marks. In Table 76 below, the scores for each conjunctive type are presented in forms of category, frequency and percentage.

Table 76 Frequency and mean scores for conjunctive types

Scores out of 10	*Additive*		*Adversative*		*Causal*		*Temporal*	
	Freq.	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
0	1	2.85	3	8.57	2	5.71	00	00
2	2	5.71	3	8.57	12	34.28	2	5.71
4	4	11.42	9	25.71	5	14.28	5	14.28
6	12	34.28	7	20.0	12	34.28	14	40.0
8	11	31.42	7	20.0	4	11.42	10	28.57
10	5	14.28	6	17.14	00	00	4	11.42
Total	35	100.0	35	100.0	35	100.0	35	100.0
Mean	6.57		5.71		4.23		6.51	
Percent	65.7		57.1		42.3		65.1	

The raw data in Table 76 can be summarised as follows:

(a) The additive conjunctive scores ranged between zero and ten, yet the majority of scores fell between six and ten (i.e. full marks). In detail, three (8.57 per cent) participants scored below two out of ten and four (11.42 per cent) scored four. At the passing level, 12 (34.28 per cent) participants scored six out of ten and at the advanced level, 11 (31.42 per cent) participants managed to score eight. At the same high level, five (14.28 per cent) scored full marks.

(b) Most of the adversative conjunctive scores were between four and ten with a few cases found below four. In frequency, six (17.14 per cent) participants had their scores below two out of ten and nine (25. 71 per cent) scored four out of ten. At the passing level, seven (20 per cent) got six out of ten. At the high level, seven (20 per cent) participants managed to score eight out of ten and six (17.14 per cent) had full marks.

(c) The majority of the causal conjunctive scores were ranged between zero and six with a few participants receiving scores above six. At the low level, 14 (40 per cent) scored below two out of ten and five (14. 28 per cent) participants scored four out of

ten. At the passing level, 12 (34. 28 per cent) got six out of ten and at the high level four (11. 42 per cent) participants managed to score eight out of ten.

(d) The temporal conjunctive scores were located between four and 10 with a few participants recording below four. Two (5.71 per cent) participants scored below four, and at the same low level five (14.28 per cent) scored four out of ten. At the passing level, 14 (40 per cent) had scores of six out of ten and at the high level, 10 (28.57 per cent) got eight out of ten. Another four (11. 42 per cent) participants succeeded in scoring full mark.

These results gave the impression that the participants of the treatment group achieved varying levels of achievement in their choices of the different conjunctive types. By calculating the mean for every conjunctive type score the differences between them became clearer. The mean for the additive conjunctive type scores was 6.57, for the adversative type scores it was 5.71, for the causal type 4.23, and the mean of the temporal type scores was 6.51. By arranging these means into hierarchical order it was found that the causal conjunctive type had the lowest mean (4.23) and the additive conjunctive type had the highest mean (6.57). The temporal conjunctive type was the second highest (6.51) and the adversative conjunctive type was third (5.71).

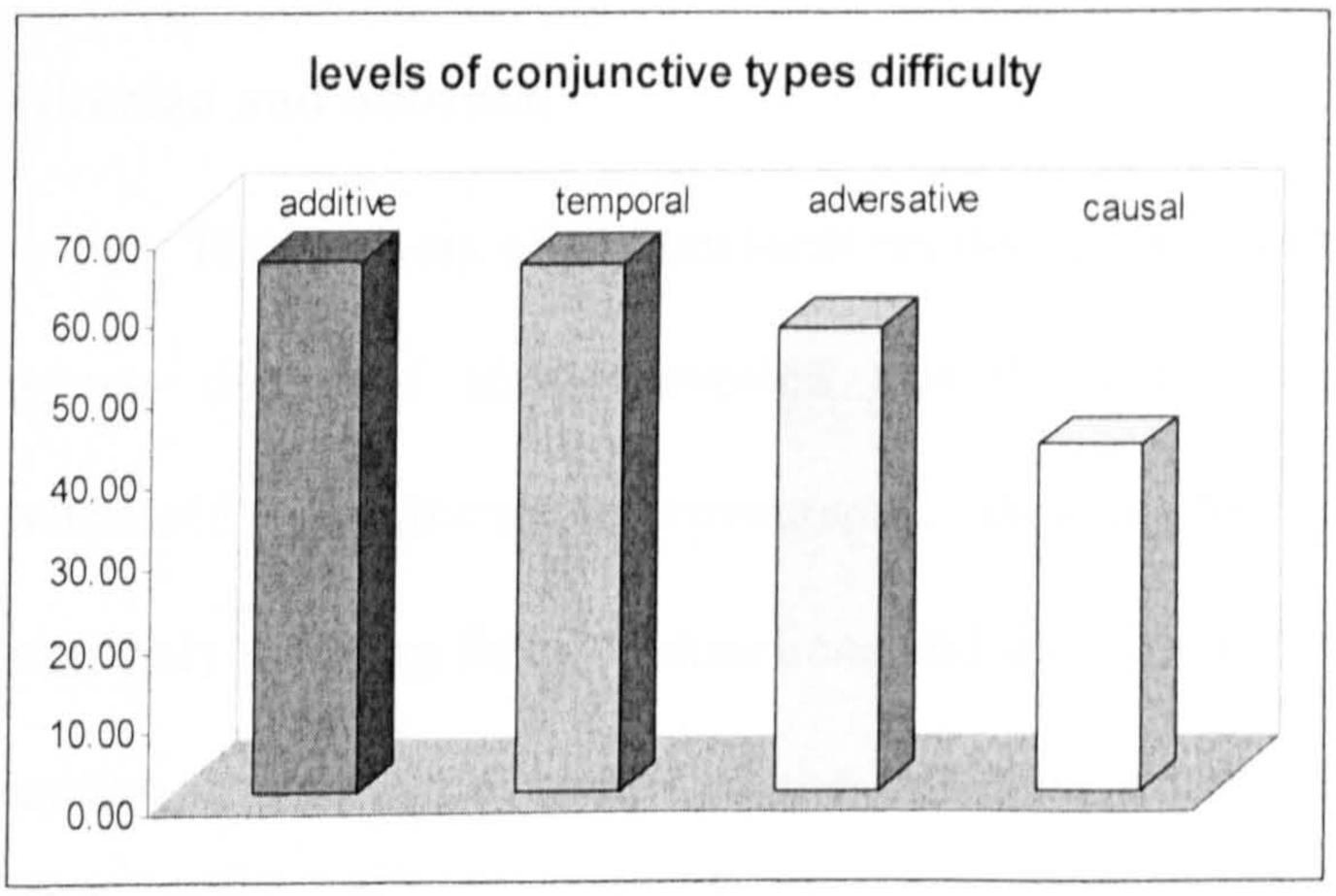
It was assumed that the participants in the treatment group were able to score higher marks with easier conjunctive type(s) and lower scores with more difficult conjunctive type(s). By considering the calculated means of the conjunctive types they were classified according to their levels of difficulty as follows. The "easy" label was given to the highest mean and "very difficult" for the lowest mean. In between these "moderate" and "difficult" levels were suggested as presented in Table 77 below.

Table 77 Classifying conjunctive types according to their level of difficulty

Level of difficulty	**Easy**	**Moderate**	**difficult**		**very difficult**
Conjunctive type	*Additive*	*Temporal*	*Adversative*	*Causal*	?
Mean	6.57	6.51	5.71	4.23	
Percent	65.7	65.1	57.1	42.3	

By describing the scores for the conjunctive types in the reading comprehension test and presenting them in the form of frequencies and percentages, and then calculating the mean score for each conjunctive type, the thesis question, which asked whether some conjunctive types were more facilitative to reading comprehension than others, was answered. It was clear that the additive conjunctions were the most facilitative conjunctive type for the reading comprehension of the Sabrata treatment group, followed by the temporal conjunctive type, then the adversative and the causal conjunctions which were the least facilitative types as illustrated in Figure 12 below.

Figure 12 Levels of conjunctive types' difficulty



In summary, the reading comprehension post-test results of the Sabrata treatment group were analysed with reference to the conjunctive types in the expository written text given to the intervention groups to examine their reading

comprehension. The objective of this analysis was to explore the level of difficulty of the conjunctive types. The descriptive analysis revealed that the additive conjunctives were the most facilitative type for reading comprehension, the temporals occupied the second position, and the adversatives and the causals did not contribute so much to the reading comprehension of the Sabrata fourth year English Department students.

From this analysis it has become clear that the reading intervention programme which was conducted in the Sabrata English Department had a positive impact on the reading comprehension of the treatment group participants who were explicitly taught conjunctions. Similar to this, it was found that the same programme had a significant effect on the reading comprehension of the Gharian English Department treatment group. In the next section, a comparison between the results of the two intervention programmes is made to explore the extent of the impact of the reading intervention programme on the Gharian and Sabrata treatment groups.

6.3.3. A comparison between the post-test results of the treatment groups in Gharian and Sabrata.

The analysis of the post-test results of the Gharian and the Sabrata treatment groups discussed above revealed that the participants in the treatment groups witnessed a significant improvement in their reading comprehension as a result of explicitly teaching them conjunctions and their use in reading comprehension. In this section, the post-test results of the treatment groups in Gharian and Sabrata were compared to measure the levels of improvement the groups achieved. This was done by using a t-test to check whether the differences between the mean scores of the groups were significant.

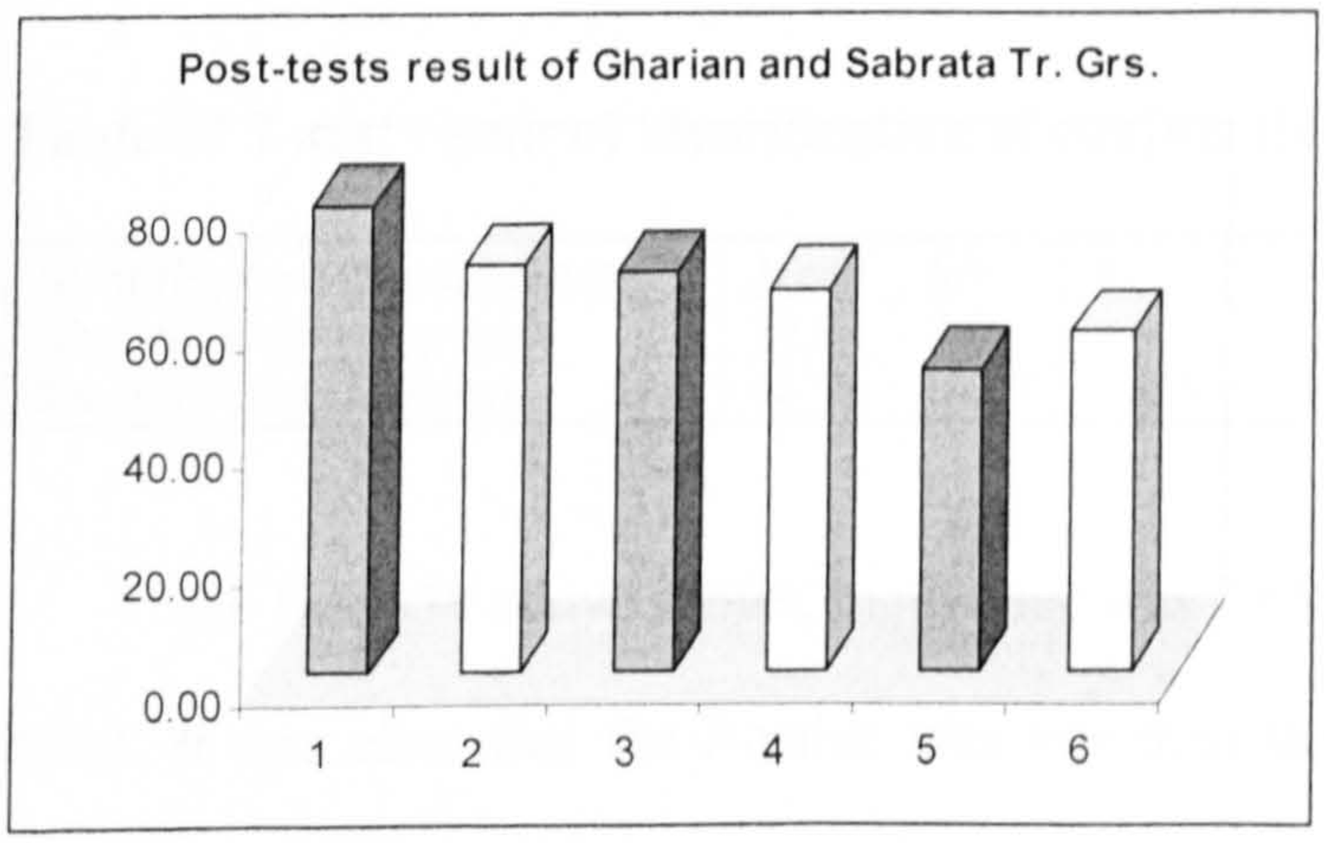
The comparison included the post-test mean scores of the identification of conjunctions, the function recognition of conjunctions, and the reading comprehension of both groups.

As shown in Table 78 below, the identification of conjunctions post-test score mean of the Gharian treatment group was 79.60 and the test mean scores of the Sabrata treatment group was 68.79. The difference between the means was 10.81 (i.e. 15.71 per cent). The function recognition of conjunctions post-test mean scores of the Gharian treatment group was 67.73 and the mean test score of the Sabrata treatment group was 65.02. The difference was computed to be 2.71. In percentage terms, the difference was 4.16. The reading comprehension post-test mean score of the Gharian treatment group was 51.0 and that test score mean of the Sabrata treatment group was 57.42. The difference between the means was 6.42 (i.e. 12.58 per cent).

Table 78 Means and standard deviations of the post-test results of Sabrata and Gharian treatment groups

Intervention groups	Identification of conjunctions		Function recognition of conjunctions		Reading comprehension	
	X	SD	X	SD	X	SD
Gharian TR.gr.	79.60	7.78	67.73	12.28	51.0	11.52
Sabrata TR.gr.	68.79	14.57	65.02	16.09	57.42	16.05
Difference	10.81		2.71		6.42	
Percent	15.71		4.16		12.58	

Figure 13 Post-tests results of Gharian and Sabrata treatment groups



With the exception of the difference between the identification of conjunctions post-test means, which was quite high, the other differences in scores were considered to be marginal. This meant that there was an equal effect of the reading intervention programme on the test performance of the Gharian and Sabrata treatment groups. However, to understand whether the differences recorded were statistically significant, a t-test analysis was conducted.

6.3.3.1. T-test analysis

The appropriate statistical t-test chosen to be used in this analysis was an independent-samples t-test since two different groups were involved in this procedure. The null hypothesis stated that "there was no significant difference between the post-test mean scores of the Gharian and the Sabrata treatment groups". The level of significance was chosen to be 0.05 due to its wide use among educational researchers.

6.3.3.2. T-test analysis of identification of conjunctions post-test results

An independent-samples t-test was conducted to compare the post-test result mean result of the Gharian treatment group and that of the Sabrata treatment group. There was a statistically significant difference between the post-test results of the Gharian treatment group (M =79.60, SD = 7.78) and the post-test scores of the Sabrata treatment group [M = 68.97, SD = 14.57; t (48) = 2.656, p = 0.011].

Table 79 T-test result of identification of conjunctions in Gharian and Sabrata

Identification of conjunctions	*Mean*	*SD*	*T*	*P-value*
Gharian treatment group	79.60	7.78		
Sabrata treatment group	68.97	14.57	2.656	0.011

As Table 79 above shows, the t-value was 2.656 and the probability value was 0.011. It was clear that the P-value was less than the threshold value of 0.05. The

difference between the means was considered to be statistically significant. This result allowed the null hypothesis mentioned above to be rejected.

6.3.3.3. T-test analysis of function recognition of conjunctions post-test results

An independent-samples t-test was used to compare the function recognition of conjunctions post-test mean score of the Gharian treatment group and that of the Sabrata treatment group. There was no significant difference between the post-test scores of the Gharian (M = 67.73, SD = 12.28) and Sabrata treatment groups [M = 65.02, SD = 16.09; t (48) = 0.581, p = 0.564].

Table 80 T-test result of function recognition of conjunctions tests

Function recognition of conjunctions	*Mean*	*SD*	*T*	*P-value*
Gharian treatment group	67.73	12.28		
Sabrata treatment group	65.02	16.09	0.581	0.564

The table above revealed that the t-value was 0.581 and the probability value was 0.564. It was obvious that the P-value was bigger than the chosen threshold value of 0.05. This meant that there was no significant difference between the means of the post-tests results. There was no evidence to claim that the groups were different.

6.3.3.4. T-test analysis of the reading comprehension post-test results

An independent-samples t-test was conducted to compare the reading comprehension post-test s mean score of the Gharian treatment group and that of the Sabrata treatment group. There was a significant difference between the post-test results of the Gharian treatment group (M = 51.0, SD = 11.52) and those of the Sabrata treatment group [M = 57.42, SD = 16.05; t (48) = -1.400, p = 0.168.].

Table 81 T-test result of the reading comprehension tests

Reading comprehension	*Mean*	*SD*	*T*	*P-value*
Sabrata treatment group	57.42	16.05		
Gharian treatment group	51.0	11.52	-1.400	0.168

As shown in Table 81 above, the t-value was -1.400 and the probability value was 0.168. It appeared that the P-value was bigger than the selected threshold value of 0.05. This result was interpreted as meaning that there was no statistically significant difference between the mean score of the analysed post-tests scores. In other words, there was no statistical evidence to suggest that the study groups differed.

The comparison between the post-test results of the identification of conjunctions, function recognition of conjunctions and reading comprehension of the Gharian and Sabrata treatment groups suggested that the level of impact of the reading intervention programme on both groups' performance was approximately equal. The only exception was the results for the identification of conjunctions. The t-test analysis revealed that there was a significant difference between the two groups in that the Gharian treatment group achieved significantly better results. Possible causes of this will be discussed in the next chapter.

These findings suggested that the reading intervention programme and the measuring instruments used in the intervention programmes which were conducted in the Sabrata and Gharian English Departments were consistent and had high internal validity. Giving that the reading intervention programmes and measuring instruments applied in both places were identical, it can be claimed that the findings of the study were externally reliable and could be generalised to other Libyan English departments.

Further evidence of the intervention programme's consistency was sought by comparing the post-test reading comprehension of the Gharian treatment group and

the post reading comprehension test results of the Sabrata treatment group which were analysed in relation to conjunctive types.

6.3.3.5. Comparing the reading comprehension post-test results of the Gharian and Sabrata treatment groups in relation to conjunctive types

The reading comprehension post-tests of the treatment groups in Gharian and Sabrata were described and frequencies and percentages given in sections 6.3.1.5 and 6.3.2.2 above. Furthermore, their means were calculated, compared and presented in various tables and graphs.

In this section, the mean scores for each conjunctive type of both the Gharian and the Sabrata treatment groups were compared with the purpose of exploring the levels of similarity between them. The data appearing in Table 82 below are summarised as follows:

Table 82 Conjunctive types mean scores of the Gharian and Sabrata treatment groups

Gharian treatment group			*Sabrata treatment group*			*Difference*
	Conjunctive type	Mean		Conj type	Mean	
1	***Additive***	70.7	**1**	***Additive***	65.7	5.0
2	***Temporal***	65.3	**2**	***Temporal***	65.1	0.2
3	***Causal***	40.0	**3**	***Causal***	42.3	2.3
4	***Adversative***	28.0	**4**	***Adversative***	57.14	29.14

(a) The additive conjunctive mean score of the Gharian treatment group was 70.7 and that of the Sabrata treatment group was 65.7. The difference between them was 5.0. An independent-samples t-test was conducted and no significant difference between the means was found (P = 0.465).

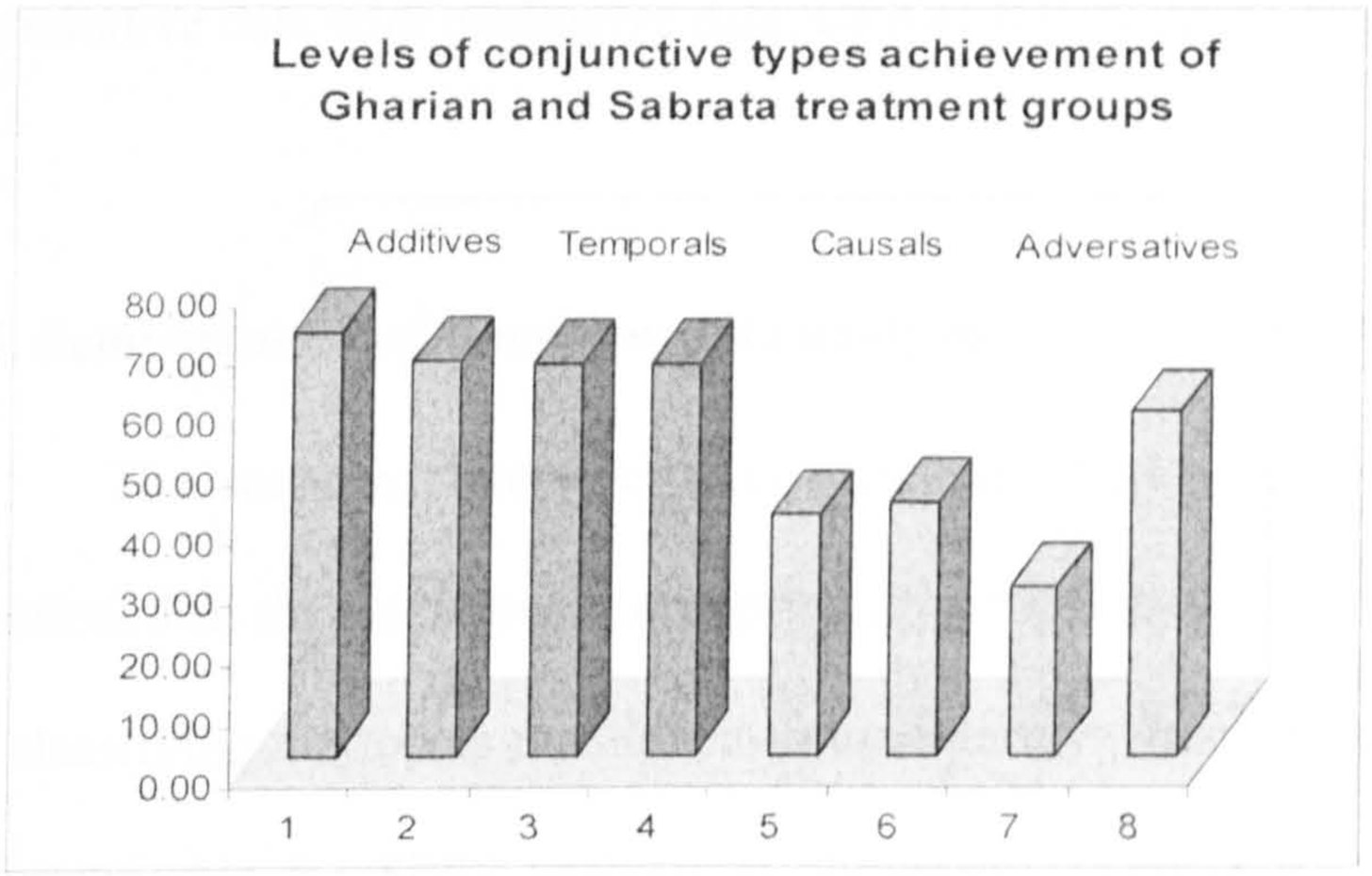
(b) The temporal conjunctive mean score of the Gharian treatment group was 65.3 and that of the Sabrata treatment group was 65.1. The difference between them was

0.2. An independent-samples t-test was used and no statistical significance between the means was found (P = 0.975).

(c) The causal conjunctive mean score of the Gharian treatment group was 40.0 and that of the Sabrata treatment group was 42.3. The difference between them was 2.3. An independent-samples t-test was conducted and no significant difference between the means was found (P = .749).

(d) The adversative conjunctive mean score of the Gharian treatment group was 28.0 and for the Sabrata treatment group it was 57.14. The difference between them was 29.14. An independent-samples t-test was conducted and a statistically significant difference between the means was found (P = 0.002). This was a surprising finding which was not in agreement with the other findings. Figure 14 below illustrates these findings.

Figure 14 Conjunctive types achievements of Gharian and Sabrata treatment groups



The comparison of mean score for the conjunctive types' of the Gharian and Sabrata treatment groups revealed that both groups had similar levels of achievement for additive, temporal, and causal conjunctives. However, a significant difference in the level of achievement was observed with the adversative conjunctions, as shown in

Table 83 below. Thus both groups were 75 per cent equal with regard to conjunctive type achievement. These findings represent evidence that the reading comprehension programme and the measuring instruments were highly consistent and had sufficient internal validity.

Table 83 Conjunctive types mean scores, significant difference, and percentage similarity of Sabrata and Gharian treatment groups

	Additives	*Temporals*	*Causals*	*Adversatives*
Ghar. Tr. Gr.	70.7	65.3	40.0	28.0
Sabr. Tr.Gr.	65.7	65.1	42.3	57.14
Significance	Not significant	Not significant	Not significant	Significant
Percentage of similarity	Seventy five percent (75%)			25%

Further evidence for the consistency of the measuring instruments was sought from the analysis of the semi-structure interview data presented in the next section. This is in line with the recommendations of Nunan (1992, p.47), who stated that "internal validity may have been strengthened further by supplementing the quantitative data with qualitative data, such as follow up interview data".

6.4. Semi-structured interview data analysis

The recorded interview data were classified according to the main topics mentioned in the interview. An important part of the qualitative data was quantified by classifying the topics mentioned in the interview into categories and coding them to be suitable for SPSS analysis as shown in appendix 4.2 and 4.2 below. Other miscellaneous data were analysed qualitatively.

The findings from the interview data analysis were used to answer the thesis question of whether the study participants were able to justify their choices in the multiple-choice rational cloze reading comprehension test.

Some of the interview data is grouped according to the main topics as follows:

6.4.1. Information about the text in the reading comprehension test

Interview responded were asked about the difficulty of the reading comprehension post-test they attended after the intervention programmes had finished in the Gharian and Sabrata English Departments.

Among the 37 respondents who attended semi-structured interviews, 11 (29.7 per cent) said that the reading comprehension test they took was easy and 23 (62.2 per cent) believed that the test difficulty level was average. Contrary to this, three (8.1 per cent) thought that the test was difficult, as shown in Table 84 below.

Table 84 Respondents' attitude towards test difficulty

	Frequency	*Percentage*
Easy	11	29.7
Average	23	62.2
Difficult	3	8.1
Total	37	100.0

Figure 15 Respondents' attitude towards test difficulty

The table and the figure above show that about 90 per cent of the interview respondents thought that the post-test items were not difficult. This finding suggested that the measuring instruments used had a high internal validity.

When the interview respondents were asked to briefly summarise the expository text used for testing their reading comprehension, one (2.7 per cent) gave a good summary and 27 (73.0 per cent) gave a satisfactory brief summary. However, eight (21.6 per cent) respondents gave poor summary of the text as shown in table 85 and Figure 16 below.

Table 85 Test summary

	Frequency	*Percentage*
Good	1	2.7
Satisfactory	27	73.0
Poor	8	21.6
Missing data	1	2.7
Total	37	100.0

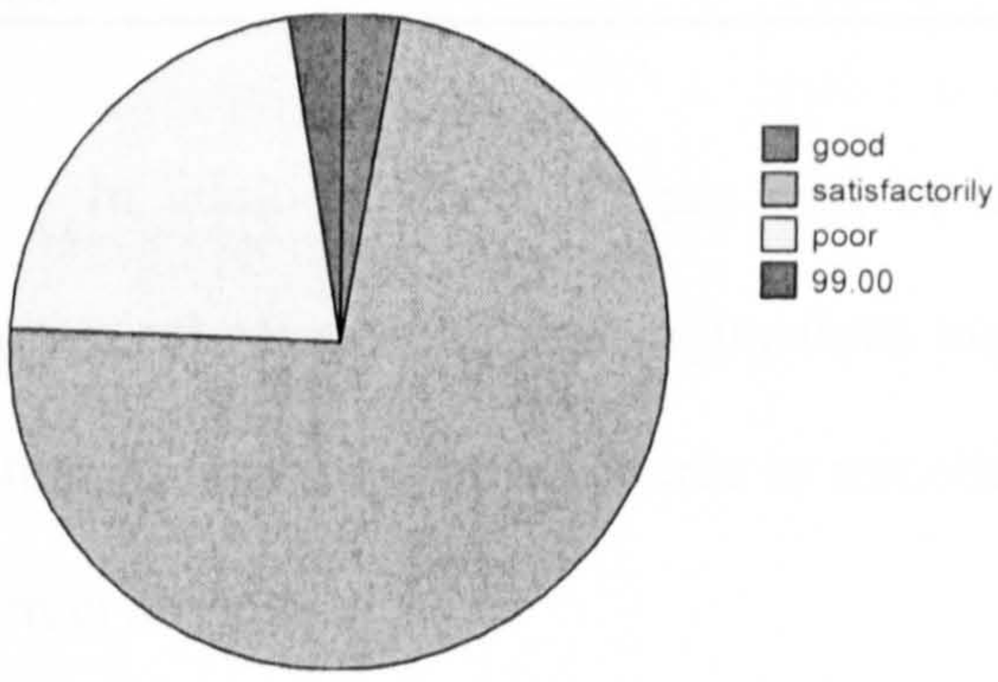


Figure 16 Test summary

The finding here suggested that about 75 per cent of the interview respondents had a satisfactory brief summary of the given text. In contrast, 21 per cent failed to give an understandable summary. This could be attributed to the shyness of the female respondents and the difficulty they found in expressing themselves in English. Apart from this, the test was thought highly readable and easy to handle by most of the intervention programme participants.

6.4.2. Eliciting information about conjunctions

After three months of explicit teaching of conjunctions it was assumed that the interview respondents would be able to easily identify conjunctions and distinguish them from other connecting items such as subordinators and coordinators. Consequently, when they were asked about the identification of conjunction, 34 (91.9 per cent) confidently said that they could always identify them. Only two (5.4 per cent) respondents said they could only sometimes do that.

Table 86 Respondents' ability to identify conjunctions

	Frequency	*Percentage*
Always	34	91.9
Some times	2	5.4
Missing data	1	2.7
Total	37	100.0

In addition, about 85 per cent of the respondents correctly identified the grammatical category of the conjunctions mentioned in the text (i.e. they recognised whether conjunctions were adverbs or something else). Only four (10.5 per cent) gave incorrect answers.

In another question the respondents were asked if they could recognize the types of conjunctions easily. 33 (89.2 per cent) believed that they could always recognize the types of conjunctions when they were used in expository text and four (10.8 per cent) thought they could only sometimes recognise conjunctive types.

Table 87 Recognising conjunctive types

	Frequency	*Percentage*
Always	33	89.2
Some times	4	10.8
Total	37	100.0

The respondents were asked whether conjunctions were easy or difficult to learn, 11 (29.7 per cent) respondents said that all conjunctions were easy to learn and 22 (59.5 per cent) believed some of them were easier than others. Yet, three (8.1 per cent) respondents had the attitude that all conjunctions were difficult to learn.

Table 88 Respondents' ability to learn conjunctions

	Frequency	*Percentage*
All easy to learn	11	29.7
Some are easier than others	22	59.5
All are difficult	3	8.1
Missing data	1	2.7
Total	37	100.0

6.4.3. Conjunctions and reading comprehension

The respondents were asked about the frequency of their conjunctions' use in reading for comprehension. Eight (21.6 per cent) said they always used them when they read for comprehension and 28 (75.7 per cent) said that they only sometimes used them.

Table 89 Using conjunctions in reading comprehension

	Frequency	*Percentage*
Always	8	21.6
Sometimes	28	75.7
Rarely	00	00
Missing data	1	2.7
Total	37	100.0

The response to this question prompted the interviewer to ask the respondents about other means they used in their reading comprehension beside conjunctions. 20 per cent said they sometimes used other means beside conjunctions such as using a

bilingual dictionary and grammatical features such as tenses when they read for comprehension.

6.4.4. Justifying choices of conjunctive types

After the completion of the post-test the respondents were asked to justify their choices of conjunctive types. Samples from each conjunctive type were selected and each interview respondent was asked to classify the conjunctive s/he chose according to its conjunctive type and to justify her/his choice by explaining the semantic relationship which existing between the linked sentences. The answer was classified either as correct or incorrect.

When the respondents were asked to explain the reasons behind their additive conjunctives choices 25 (67.6 per cent) gave correct justifications and nine (24.3 per cent) gave incorrect answers. Three (8.1 per cent) kept silent, giving neither correct nor incorrect answers. These responses were classified as missing data. Correct justifications for the adversative conjunctives were given by 15 respondents and 20 (54.1 per cent) gave incorrect answers. Two missing data were recorded. The causal conjunctives were justified correctly by 24 (64.9 per cent) respondents and 12 (32.4 per cent) gave incorrect answers. One missing data was recorded. The temporal conjunctives were the easiest for the respondents to justify. 35 (94.6 per cent) gave correct justifications and only two respondents (5.4 per cent) gave incorrect answers.

By arranging the percentages of the correct answers for conjunctive types in descending order the following order was obtained: temporals (94.6 per cent), additives (67.6 per cent), causals (64.9 per cent), and adversatives (40.5 per cent). This classification suggested that the temporal conjunctions had the highest percentage of correct justifications and the adversative conjunctions had the lowest.

The additives occupied the second position and the causals were third, as shown in Table 90 below.

Table 90 Respondents' justifications of their choices of conjunctive types

Descending order →	***Temporal***		***Additive***		***Causal***		***Adversative***	
	Freq	percent	Freq	percent	Freq	percent	Freq	percent
Correct	35	94.6	25	67.6	24	64.9	15	40.5
Incorrect	2	5.4	9	24.3	12	32.4	20	54.1
Missing data.	00	00	3	8.1	1	2.7	2	5.4
Total	37	100.0	37	100.0	37	100.0	37	100.0

These results suggested that most of the participants who attended the reading comprehension post-test answered the post-test questions with a satisfactory understanding of the conjunctive types and the semantic functions they signal in written text. The low percentage of correct justifications for the adversative conjunctions was in agreement with the low post-test result for the Gharian treatment group in relation to this type. These findings answered the thesis question which asked whether the participants of the study were able to justify their choices of the rational cloze multiple-choice test. With the exception of the adversatives which were found to be difficult for the participants, all other conjunctive types had high percentage of correct justifications as shown in Table 84 above. This meant that the participants answered their reading comprehension post-test questions with a satisfactory understanding of the role of conjunctions in reading comprehension.

6.4.5. Analysis of miscellaneous interview qualitative data

Many valuable pieces of information related to conjunctions and their role in reading comprehension were mentioned in the interviews by individual respondents. It was impractical to group these data and code them to be analysed quantitatively

since each item was mentioned by only a few respondents. These data are presented and analysed qualitatively as follows:

A female respondent (no 27) argued that it was some times difficult for her to distinguish one form of conjunction from another because "they are the same". Conjunctions such as *though* and *although* are almost similar in form and pronunciation. *At last* and *at least* were other examples of the respondent's claim. Such an attitude was considered to be natural at the initial stages of learning conjunctions. However, most of the other respondents did not mention this problem. This was clear from their performance in the relevant test. It was observed that the average scores for the post-test identification of conjunctions of the treatment groups in the Gharian and Sabrata English Departments were very high: in Gharian 79.60 per cent and in Sabrata 68.79.

Respondent (no 5) said it was easy to identify conjunctions but it was sometimes difficult to classify them according to their semantic function, "one conjunction has two functions". She added that some conjunctions such as *since, when, while* and *then* have more than one semantic function. *Since,* for example, could be classified as a causal conjunction and in another context it could be classified as a temporal conjunction. This is in line with Townsend and Bever's (1978, p.510) observation that the "*since* clause may indicate an event that causes the main clause event, or it may simply indicate an event that occurs prior in time to the main clause event." In the same way, *then* could be used as a temporal or as a causal conjunction. Some conjunctions do have more than one semantic function as presented in the taxonomy of Halliday and Hasan (1976, p.243).

All these points which could confuse students were explained throughout the application of the reading intervention programme. Many examples were given to

help the treatment groups' participants distinguish one function of conjunction from another. Still, more time and practice were needed to familiarise students with the conjunction types and their usage in reading comprehension. In any case, the mean scores of the function recognition of conjunctions post-test in Gharian and Sabrata were satisfactory. The mean score of the Gharian treatment group was 67.73 and in Sabrata it was 65.80.

Another respondent (no16) distinguished between recognizing the function of conjunctions and the semantic relations existing in text. She said "I can classify them but not use them in text". Paraphrasing her quote, it was easy for her to classify conjunctions according to their function but it was difficult for her to exploit their presence in written texts correctly.

To understand the semantic relationship existing between joined sentences it is vital to understand the meaning of the individual key words which construct the sentences. Failure to do so could lead to difficulty in exploring semantic relationship. This is another skill a foreign language student needs to learn.

Extracting meaning from individual sentences was an easy task for respondent (no 24), but to understand the global meaning of the text was something new for her. She said "I can understand the meaning of sentences or paragraphs but not paragraphs together". This respondent read and understood every paragraph separately from the preceding and the following one. This strategy impedes the global understanding of text. Conjunctions such as *first, second* and *finally* join text components globally. Yet, contrary to many previous research findings, the treatment group participants in Gharian and Sabrata managed to get high scores in their choices of temporal conjunctions. The post-test mean score of Gharian was 65.3 and in Sabrata it was 65.1.

The role of conjunctions as cohesive devices was highlighted by two respondents (nos 23, 26). One of them thought that a text without conjunctions was unreadable. She spoke in Arabic "translated in English: a text which does not include conjunctions is difficult to understand". She recognised that conjunctions contributed to the coherence of the text and made the text easier to comprehend.

Respondent (no 22) claimed that a large number of conjunctions and the way they were used to construct global relationships in text were something new for her. She said "I don't know this relation before". It was clear that many students had not learnt reading strategies before. Students can easily learn new vocabulary by heart but to recognize the functions of words like conjunctions was difficult.

With the belief that the presence of punctuation marks in written text could lead examinees to guess the correct conjunction, all punctuation marks were deleted from the expository text used for testing comprehension. One of the respondents (no 33) commented on this, saying that "punctuations help me in the right choose". She meant that with the presence of the punctuation marks, choosing the correct conjunction could be easier. Students learnt in the reading intervention programme that, for example, when *although* occupies the initial position of an independent sentence it should be preceded either by a semi colon or by a full stop and followed by a comma.

Confidence was another factor which had an important impact on the results of the reading comprehension test. A respondent (no 15) said "I am not confident when I choose conjunctions". Even though many students knew the correct answers to many questions they had no confidence about making the correct decision. Consequently, they chose the incorrect conjunctive option. To build confidence, it is important to

experience more texts reading on various topics and to have more practice under the guidance of a qualified tutor.

Apart from the points mentioned above, the respondents expressed their satisfaction with the programme and had the feeling that they got something new not only in reading skills but also in all other language skills. Only one respondent (no 1) felt that there was too much focus on conjunctions at the expense of other text features. She said "every day conjunctions!" She could be right in that the major focus of the study was conjunctions and their impact on reading comprehension; nevertheless, conjunctions were taught through presenting expository written text and in order to understand conjunctions other semantic and grammatical text features were explained.

A few cases gave some responses in Arabic because they did not have enough confidence to express themselves in English. Their responses were accepted since the aim of the interview was to collect information related to the justification of post-test answers with all means available to the researcher.

All in all, most of the respondents were happy with the programme and they wished that more time was available to have enough practice and more extensive reading in materials chosen carefully to improve their reading comprehension.

6.4.6. Summary

An important part of the semi-structured interview data were quantified and analysed using the SPSS software programme. A high percentage of the respondents believed that the post-test items were clear and not difficult. Most of the conjunctive types mentioned in the reading comprehension post-test were correctly justified with the exception of the adversatives, which had a low percentage of correct justifications.

Other miscellaneous data were qualitatively analysed. A few important points were highlighted by the respondents such as distinguishing conjunctions from other linking language items and the distinctions between the conjunctive types. Apart from that, the respondents expressed their happiness with the reading intervention programme they attended and recommended that enough time be given to similar programmes in the future. These findings will be discussed in the next chapter in relation to previous research findings.

Chapter Seven

Discussion of the study findings

7.1. Introduction

This study examined the effect of textual cohesive conjunctives on the reading comprehension of fourth year English department students of Libyan Universities in the Sabrata and Gharian English Departments,. These students study English as a foreign language, their first language being Arabic. As mentioned in the literature review, there has been no consensus on the actual effect of conjunctions on the reading comprehension of either L1 or L2 students. In this chapter, the findings of this study will be discussed with reference to other important which have studies investigated this topic.

Cohesive theory as proposed by Halliday and Hasan (1976), was adopted as the theoretical framework for this study. Consequently, conjunctions as defined by Halliday and Hasan were explicitly taught during the application of the reading intervention programme and were used in the pre-and post-test measuring instruments to test the reading comprehension of the research participants.

In order to answer the thesis questions mentioned in Chapter Five, a hundred students studying English from Gharian and Sabrata English Departments participated in the intervention programme. 30 participants in the Gharian English Department were pre-and post-tested and 70 from the Sabrata English Department were post-tested only. From the total number (i.e. 100), 37 students who were assigned to the treatment groups in both departments were interviewed to justify their post-test answers. Data collected by the indicated instruments were analysed and the findings were presented in the previous chapter.

In summary, the analysed data revealed that explicit teaching of conjunctions had a significant impact on the study participants' ability to identify conjunctions, recognise their function, and to read authentic expository texts with satisfactory understanding. The participants of the treatment groups performed much better than the comparative groups in the post-tests after three months of conducting the reading intervention programme.

With the exception of the results for the post-test identification of conjunctions, both the Gharian and the Sabrata treatment groups had approximately the same level of achievement. This was evidenced by the results of the statistical t-test analyses which revealed that no significant differences were reported between the means of the post-test scores of the Gharian and the Sabrata treatment groups.

The more or less similar results of the Sabrata and the Gharian treatment groups in the major post-tests were maintained when the reading comprehension post-test results of both groups were analysed in relation to conjunctive types. Both treatment groups showed the same levels of improvement with regard to the additive, temporal and causal conjunctions. No significant differences were found between the mean scores of the indicated conjunctive types of both groups. The exception was the adversative conjunctive type where, even though the Gharian treatment group achieved some improvement, the improvement of the Sabrata treatment group was significantly higher.

With reference to the impact of the conjunctive types on reading comprehension, the Gharian treatment group found the additive conjunctions the most facilitative to their reading comprehension, whereas the adversatives the most difficult type. The temporals and causals held second and third positions respectively. No significant differences were reported between the mean scores for additives and

temporals and for temporals and causals; however, there was a statistically significant difference between the mean score for additives and causals, and an extremely significant difference was found between the means of the adversatives and every other conjunctive type.

The Sabrata treatment group found the additives and the temporals equal in terms of level of difficulty for their reading comprehension. The adversatives and the causals occupied third and fourth levels of difficulty. No statistically significant differences were recorded between the mean scores for the additives, temporals and adversatives in terms of level of difficulty. However, the causals were classified as a significantly more difficult conjunctive type, in comparison with the other three conjunctive types.

These findings are discussed in the following sections with reference to the findings of relevant studies discussed in the literature review. This is preceded by a discussion of the findings from the identification of conjunctions, function recognition of conjunctions and reading comprehension tests given to the study participants.

7.2. Discussion of the identification of conjunctions test findings

The post-tests results of the Gharian and Sabrata treatment groups were found to be significantly (higher at $p<0.000$, and $p<0.000$ respectively) in comparison with their results in the pre-test and with the post-test result of the comparative groups.

To properly evaluate the progress achieved by the treatment groups in their identification of conjunctions, it is important to consider the situation of the students at the time of taking the pre-test. A careful investigation of the pre-test performance of the Gharian comparative group and the treatment group revealed the following:

1. It was clear that the concept of conjunction itself was almost new, or not clear enough to most of the pre-tested students. Such a finding was not surprising given that the items under investigation are labelled by linguists and language teachers in a variety of ways since they attracted attention as independent cohesive devices. As discussed in Chapter Three, Schiffrin (1987), Knott and Dale (1993), Fraser (1998, 1999) called them discourse markers; Blakemore (1987) discourse connectives; and Quirk et al. (1985) semantic conjuncts. Many other labels cited in Fraser (1999) include discourse operators Redeker (1990, 199), discourse particles Schourup (1985), pragmatic particles Ösman (1995), pragmatic connectives Van Dijk (1979) and Stubbs (1983), and pragmatic expressions Erman (1992). Thus, the items the participants were asked to identify could have been presented to them under any of the mentioned names.

It was possible that the items which Halliday and Hasan (1976) labelled as conjunctives/conjuncts could have been presented to the students in their traditional grammar lessons under titles such as coordinators and subordinators. The findings from the questionnaire and the pre-test results revealed that the study participants were not explicitly taught conjunctions as a part of their reading comprehension course.

2. The questionnaire findings suggested that conjunctions, as defined by Halliday and Hasan (1976) and clarified by Martin (1992), were not consistent with the few conjunctions that were included in the English syllabus the students had been exposed to in their previous years of study. In the related literature, different definitions have been proposed by linguists. Many of these were mentioned in Chapter Three. Most of the definitions consider the form, function and the position of conjunctions between or within sentences.

The participants' failure to identify the form of conjunctions and the position they occupy between independent sentences might have led many of them to underline or circle other words or expressions and miss the correct answers. For instance, it was observed that many prepositions were circled. It was clear that they could not distinguish between prepositions, which are usually followed by a noun or a noun phrase and conjunctions which are followed by a clause or a sentence.

The study participants also failed to distinguish between conjunctions and other connectives such as coordinators and subordinators. Even though coordinators and subordinators can function as conjunctions in certain contextual environments, the participants thought that every *and / but / yet* is a conjunction even if it joins two or more nouns or noun phrases.

3. With conjunctions such as *and, but, or, so*, and *then* in mind, the participants of the intervention programme did not manage to recognise that phrases such as *because of that, first of all* and *on the other hand* could also function as conjunctions. Consequently, most of these types of conjunctions mentioned in the identification of conjunctions test were missed. Halliday and Hasan (1976) included many phrases with an optional or obligatory *that* in their suggested conjunctive taxonomy, such as *in spite of that* and *as a result of that.*

4. As mentioned in Chapter Three, there are many practical procedures which help students to identify conjunctions and distinguish them from other language categories. Knott and Dale (1993), and later Knott and Mellish (1996), suggested an easy and practical technique which, if understood properly, could facilitate the identification of conjunctions. The pre-test performance of the study groups suggested that the study participants had no idea about these skills. It was concluded that these useful techniques were not clearly presented in their traditional syllabus.

5. Conjunctions are abstract items which makes their learning a difficult task. Williams (1983, p.47) emphasised that a conjunctive "represents an abstract concept, so that it is difficult for the learner to form a mental image of the underlying proposition being expressed" unless s/he is explicitly taught to do so.

As a consequence of this hazy picture the participants had about the identity of conjunctions, the treatment and comparative groups in the Gharian English Department achieved low pre-test scores in their identification of conjunctions. This low level of achievement reflected the students' understanding of conjunctions as an independent language category.

However, after three months of explicit teaching of conjunctions to the treatment groups in the Gharian and Sabrata English Departments a remarkable improvement was recorded in the identification of conjunction post-test results. The percentage improvement between the pre-test and post-test results of the Gharian treatment group was 145.22 per cent.

The post-test results suggested that the reading intervention programme had a positive impact on the identification of conjunctions of the treatment groups both in Sabrata and Gharian. Because of their regular attendance at the programme sessions, the participants were able to identify conjunctions, understand their meaning, and distinguish them from other English grammatical categories such as coordinators and subordinators. That was supported by giving the participants a complete list of the conjunctions as classified by Halliday and Hasan (1976) by the end of the programme. It was observed that most participants, and especially the female students, learned the list by heart which made the post-test identification of conjunctions easy for them. The mean post-test score for the identification of

conjunctions of the Gharian treatment group was 79.60 and for Sabrata it was 68.79, as shown in Table 72 in Chapter Six.

7.3. Discussion of function recognition of conjunctions' test findings

As a preliminary step to using conjunctions in reading comprehension, it was vital that students understand the function of conjunctions and the semantic relations they signal. Many classifications of conjunctions according to the semantic function they impose on written text have been suggested by linguists since conjunctions became the focus of language research. In Chapter Three many classifications of conjunctions were proposed by Halliday and Hasan (1976), Gutwinski (1976), Martin (1992), Sanders and Noordman (2000), Knott and Dale (1993), and Fraser (1999).

As indicated above, the Gharian treatment and comparative groups failed to identify conjunctions in the identification of conjunctions pre-test. Consequently, this was reflected in the performance of the function recognition of conjunctions pre-test, where groups performed poorly.

Such a result was expected, since the inability to identify conjunctions impeded the ability to recognise this function. The participants' poor pre-test performance represented the vague picture they had about the semantic functions of conjunctions. Many heterogeneous classifications were observed in the participants' answers

The results of the pre-test suggested that the study participants were in the dark about the function of conjunctions and the endless debate which has been going on among linguists about the optimal semantic classification of conjunctions and the role they have in the cohesion and coherence of text. Even though the intervention programme participants were only a few months away from graduation it was clear

that conjunctions and their semantic function were some of the English language topics which they had been not exposed to during their previous years of study.

It was only after their attendance at the reading intervention programme that the participants in the Gharian and Sabrata treatment groups managed to recognise the semantic function of conjunctions as proposed by Halliday and Hasan (1976). Before that, terms such as additive, adversative, causal, and temporal were entirely new to them.

The post-test results for the function recognition of conjunctions of the treatment groups showed a considerable improvement in comparison with their pre-test results. These results were achieved even though a few interview respondents complained that some conjunctions such as *since* and *then* were classified by Halliday and Hasan under more than one conjunctive type which make their classification confusing. As presented in Table 72 in Chapter Six, mean post-test score for the function recognition of conjunctions in the Gharian treatment group was 67.73 and in the Sabrata treatment group it was 65.02.

Other semantic classifications such as Martin's taxonomy were not the prime focus of the reading intervention programme because, as mentioned above, the cohesion theory proposed by Halliday and Hasan (1976) was adopted as the theoretical framework for this study. For consistency, it was decided to only include the taxonomy suggested by them in the reading intervention programme. This, of course, does not mean that other conjunctive function classifications are not important. On the contrary, Martin's classification is very detailed even though, as Louwerse (2000, p.190) comments, it "is far too fine-grained ... and far too detailed for an efficient taxonomy."

Other classifications such as Gutwinski's (1976) Knott and Dale's (1993), and Fraser's (1999) are dominated by oral discourse conjunctions such as *well* and *now* which do not concern us here since the topic of the thesis is the investigation of the impact of conjunctions on reading written text, not on oral discourse. Even the oral discourse conjunctions mentioned by Halliday and Hasan (1976) were excluded from this study because of the focus on written discourse.

7.4. Discussion of the reading comprehension test findings

The participants in the treatment groups in the Sabrata and the Gharian English Departments achieved significant progress in reading comprehension in comparison with their pre-test results and with the post-test results of the comparative groups. It was suggested that the application of the reading intervention programme had a positive impact on the reading comprehension of the students who regularly attended the programme sessions. The remarkable improvement achieved by the treatment groups in their post-test identification of conjunctions and function recognition of conjunctions were reflected in the participants' post-test performance in reading comprehension.

Considering the above results, it has to be recognised that the levels of achievements in all the tests varied. The improvement achieved in the post-test identification of conjunctions was 145.22 per cent in Gharian and 125.25 per cent in the Sabrata English Department. The post-test improvement in the function recognition of conjunctions in Gharian was 95.75 per cent and in Sabrata was 97.90. In contrast, the post-test improvement in reading comprehension of both groups was significantly lower. The percentage of achievement in Gharian was 30.76 per cent and in Sabrata it was 33.04 per cent. These differences can be explained as follows:

1. As indicated above, it was found that the participants in the treatment groups learnt the taxonomy of Halliday and Hasan (1976) by heart easily during the application of the reading intervention programme sessions. Their task was then merely to remember the conjunctions included in the list and recite them from time to time to be ready to recall them again in the post-test. By so doing, they had the highest post-test scores in comparison with the other post-test results.

2. Students usually do not have much difficulty in understanding certain rules or classifications, but when they need to utilise them as a part of their reading strategies they sometimes fail to do so. As Goldman and Murray (1992, p.505) state, "ESL students frequently are very good in reciting the prescriptive rules of usage for various [conjunctions]," but to master the appropriate use of conjunctions is "extremely difficult". Geva also (1992, p.735) highlights that "adult L2 learners may demonstrate familiarity with the meaning of conjunctions, yet fail to utilize them in extended discourse."

3. It seems to me that identifying a list of conjunctions and classifying them into four categories according to their semantic functions does not take much time and effort to understand. However, to recognise the semantic functions existing in a written text, and to use the correct conjunction to make certain semantic relations explicit needs practice and time.

The three months of explicit teaching of conjunctions to the treatment groups succeeded in developing the study participants' ability to identify conjunctions and classify them according to their semantic functions; however, this duration was not long enough for them to exploit this knowledge and use it efficiently in reading comprehension. More time and effort would be needed to achieve this objective. While there was a significant improvement in the reading comprehension of the

treatment groups, this improvement could be much higher if more time was given. The participants could benefit much more from using conjunctions in their reading comprehension if they were explicitly taught these items in early educational stages.

4. The participants in the intervention programme were studying English as a foreign language, which meant that their reading skills were not as fluent as those of native speakers. Goldman and Murray (1992) and Johnston and Pearson (1982) observe that foreign language readers usually read in small text units such as clauses and sentences. They have no experience of forming correct global meanings without intensive training. Cohen et al. (1988) also state that foreign language readers read more locally than do native readers. Many students highlighted this point when they were interviewed to justify their post-test answers.

5. Even though the participants in the study were chosen from the fourth year, which was their final year of study before graduation, their English language level was not good enough to enable them to tackle any written text. It was believed that some of the participants were not proficient enough to fully understand the expository text given to them in the reading comprehension test appropriately because of the limited vocabulary they had. This may have had a negative effect on test results. Qian (2002, p.518) found a "high inter-correlation between vocabulary size, depth of vocabulary knowledge, and reading comprehension."

6. The participants in this study were adult students learning English as a foreign language. They were literate in their native Arabic language. Because of this, there was a possibility that Arabic language reading strategies could interfere with the reading strategies used when they read in English. Given the limited number of conjunctions existing in the Arabic language the students could use other language textual features at the expense of conjunctions when they read in English. Participants

with limited L2 proficiency could find it difficult to transfer their L1 reading skills to the second language (Nunan 1999, p.258).

The negative impact of the points mentioned above were minimised after the treatment group participants in the Gharian and Sabrata English Departments attended the reading intervention programme. However, more time and practice would be needed for better performance.

Our study findings support those of other studies (such as Halliday and Hasan 1976, Chapman 1983, Williams 1983, Smith 1983, Martin 1992, Louwerse 2000) which report that conjunctions as textual cohesive devices contribute to the cohesion and coherence of written text and consequently have an important role to play in facilitating the reading comprehension of native and foreign English language readers. For example, Halliday and Hasan (1976, p.227) emphasise that conjunctions "specify the way in which what is to follow is systematically connected to what has gone before". Their presence in any written text is vital to its understanding since they save the time of the reader by directly guiding her/him to the semantic relations existing in the text and helping them in forming its local and global meaning.

The significant improvement the treatment groups achieved in their post-test reading comprehension were consistent with the findings of, for example, Chapman (1983), who found that conjunctions were important clues to text understanding. Both L1 and L2 readers benefited from the presence of conjunctions in understanding texts since "they connect and integrate the meaning of the propositions" (ibid. p. 78).

Geva's (1992) research findings were approximately similar to ours. She emphasised that foreign language students benefited from conjunctions in their reading comprehension; however, readers with better English were in a better position to benefit from these items than readers with poor English.

The reading comprehension post-test results were also in agreement with the findings of Chung (2000). His study revealed that an L2 low language performance group relied heavily on explicit signals in their reading performance. He found that paragraph headings and connectives have a positive effect on local and global reading levels.

In contrast, a few studies have found that conjunctions have no effect on the reading comprehension of L2 language readers. Irwin (1982) found that her experiment's participants did not benefit from the explicit presence of conjunctions in the measuring instrument text she used for testing their reading comprehension.

Irwin's (1982) findings could be explained in many ways (see Chapter Four for a discussion of her findings). For instance, the materials Irwin used were selected from a 10th grade history text, which meant that narrative topics were the measuring instruments of her experiment. There is a general consensus that narrative texts are easy to understand since the reader can "supply the information independent of the signals in the text" (Degand and Sanders 2002, p.741).

With narrative texts the reader's knowledge of the world or what some linguists call knowledge of the domain assists them to predict the meaning with little help from textual features such as conjunctions. Expository texts are more reliable measuring instruments of the impact of conjunctions on reading comprehension. As Goldman and Murray (1992, p.504) report, "the less a reader knows in the domain, the more important is knowledge of how general linguistic devices may be used to ascertain the local and global structure of the text."

Another possible cause for Irwin's finding was, as she recognised, related to her participants. It seems that a heterogeneous sample of students was asked to attend her study tests. For example, Irwin (1982, p.278) states that "no information about

[the subjects'] reading ability was available." Native skilled readers can extract the correct meaning from narrative texts without the assistance of conjunctions. As she concludes, "less mature or able readers may be affected by coherence explicitness ...whereas most of the more mature skilled readers in the present study were not" (Irwin 1982, p. 282).

Furthermore, a handful of studies have come to the conclusion that the explicit presence of conjunctions in written text could have a negative effect on recall. Even though, as mentioned above, recall is different from comprehension, they are interrelated since good recall presupposes satisfactory understanding. Millis et al. (1993, p.317) found that "the recall for passages without connectives was higher than the recall for passages with connectives." They claimed that conjunctions constrain the scope of elaboration and lengthen the joined sentences. Their findings came as a surprise at the time. Millis et al. (1993, p.331) recognised that "the finding that connective interference was obtained in the context of appropriate connectives is surprising." Their explanation for this result that conjunctions did not add cohesion to the passages is incompatible with the findings of many other studies mentioned above (Halliday and Hasan 1976, Gutwinski 1976, Smith 1983, Martin 1992, Louwerse 2000, and many others).

These surprising findings could be attributed to the type of conjunctives they selected for their study. Only two types of conjunctions were used in their experiments: causal and temporal. Other conjunctive types such as additives and adversatives were not included in their research. It is difficult to imagine a written text that does not include additive conjunctions unless that text is highly artificial. It is suggested that highly manipulated texts with certain types of conjunctions plugged

to them are not very sensitive in measuring either recall or comprehension (Degand and Sanders 2002).

Millis et al. (1993, p.335) reported that "connectives constrained readers from generating additional elaborations beyond the explicit connective." This is inconsistent with other studies which have found that conjunctions save the time of the reader by directing her/him to the semantic relation existing in the text, thereby improving the speed of their reading process. Sanders and Noordman (2000, p.41) argued that "signalling helps readers interpret the text and that it would improve recall of textual information." Conjunctions can make reading difficult only if they are not carefully selected by the text writer or inserted in the wrong places.

7.5. Discussion of the effect of conjunctive types on reading comprehension

As indicated above, the ability to identify conjunctions and recognise their semantic function improved the reading comprehension of the intervention treatment groups in both the Gharian and Sabrata English Departments. However, the data analysis revealed that certain conjunctive types were found to be more facilitative of reading comprehension than others. The Gharian and Sabrata treatment groups found the additives the most facilitative conjunctive type for their reading comprehension. Their mean for scores additives were 70.7 and 65.7 per cent respectively. This was followed by temporals 65.3 and 65.1 per cent and causals 40.0 and 42.3 per cent. The adversative conjunctions, in contrast, were found to be the most difficult type 28.0 per cent for the Gharian treatment group and 57.14 for the Sabrata treatment group

Such findings were expected and are in congruence with many other research findings. Goldman and Murray (1992) found that the additive conjunctions were the easiest to be chosen by their study participants, which meant that these conjunctions

were the most facilitative textual cohesive items for reading comprehension. Similar to this, Ozono and Ito (2003) came to the conclusion that their study participants performed much better in their reading comprehension with the assistance of additive conjunctions.

Goldman and Murray (1992, p.506) argued that additive conjunctions might be the easiest for their research subjects because "for additives, readers need only determine whether an elaboration relation exists between the ideas being connected." There was also the possibility that Goldman and Murray's participants overused this type of conjunction because of the various semantic relations this type of conjunctives could represent. *And*, for example, can signal many other semantic relations existing between the sentences it joins beside the additive function as Carston (1993) reported. Caron et al. (1988, p.320-21) also indicated that "the function of 'and' appears to be quite different. ...this conjunction can express not only a logical conjunction, but also a variety of semantic relations between sentences, including, in particular, causal/temporal relationship."

Contrary to the above findings, Caron et al. (1988) and Murray (1997) found that their studies participants' recall and comprehension did not improve with the presence of the additive conjunctions in the text they were asked to recall and comprehend. Other conjunctive types were found to be more effective for recall and reading comprehension. It is suggested that these findings could be exclusive to the additive conjunction *and,* since it was commonly used by these researchers as a representative of the additives. Caron et al. (1988, p.321) found that "*and* sentences were recalled least of all" (italics added).

Unexpectedly, the participants in the treatment groups in Gharian and Sabrata found the temporal conjunctions as easy as the additives. No statistically significant

difference was recorded between their mean scores. This was emphasised by the results of the interviews, which revealed that 94 per cent of the temporal conjunctions were correctly justified. The temporal conjunctions as cohesive ties usually impose local and global semantic relations on the segments of the written text. Because of this characteristic, it was assumed that FL readers might find the global relations difficult to recognise. This was highlighted by Goldman and Murray (1992). They stated that the temporal conjunctions were "more difficult for all types of readers largely because they require reference to the more global discourse context" (ibid. p.506). As reported above, Geva (1992, p.735) also stressed that L2 readers "may be unable to deal with global coherence, based on larger text chunks."

An explanation of this positive result could be attributed to the direct focus of the reading programme on the importance of local and global coherence to text understanding. The researcher was aware of the role the temporal conjunctions play in the comprehension of written text globally. Because of this, the treatment group participants were alerted to the importance of extracting the text meaning on the global level by using temporal conjunctions such as *firstly* and *finally*.

The causal conjunctions had a significant impact on the reading comprehension of the participants in the intervention programme, but the effect was not as high as with the additives and the temporals. This result was supported by the result of the semi-structure interviews. About 65 per cent of the causal conjunctions were correctly justified which classified them third after additives and temporals. This finding is in agreement with the assumption of Sanders and Noordman (2000, p.44) that the "problem-solution relation leads to slower processing because it is more informative (it contains more information) than the list relation is; after all, causal relations presuppose additive relations."

However, this finding is inconsistent with those of Caron et al. (1988, p.320) who found that "pairs of sentences connected by the conjunction 'because' were much better recalled than the same pairs of sentences presented unconnected and, more so, when connected by the conjunction 'and'." Even though, as indicated above, recall is different from comprehension, there is a close relationship between them since recall presupposes comprehension. Other studies have also found that causal conjunctions speed the integration of sentences and save the reader's time (Millis and Just 1994; Traxler et al. 1997) despite varying explanations of the stages of integration.

The slight effect of adversative conjunctions on the reading comprehension of the Gharian treatment group was expected because, as Ozono and Ito (2003) argue, the adversatives add a heavy cognitive load to L2 readers who have limited cognitive reading capacity. Another reason could be attributed to the lower frequency of occurrence of adversative conjunctions in text books, which results in less exposure to them (Goldman and Murray 1992). Furthermore, the adversative relations could be more difficult to construct than others, (Caron et al. 1988). This result was supported by the findings of the semi-structure interview which revealed that the adversatives were the least often correctly justified. About 54 per cent of the adversatives were incorrectly justified by the interview respondents.

These findings supported those of Millis and Just (1994) since "*although* sentences resulted in lower comprehension accuracy and slightly lower reading times than *because* sentences, there is some reason to suspect that these sentences were tougher to comprehend" (ibid. p. 143).

Contrary to the Gharian treatment group, the Sabrata treatment group found the adversative conjunctives more facilitative to reading comprehension than causal conjunctions, which had less effect than the additives and the temporals. This

surprising result is in accordance with Murray's (1997) continuity hypothesis. This hypothesis predicts that "additive and causal connectives should lead to less processing facilitation than adversative connectives because the former indicate continuity in the discourse whereas the adversatives indicate discontinuity" (ibid. p. 229).

The significant difference in the facilitating role of the adversatives reported between the Gharian and Sabrata treatment groups could be attributed to the different number of participants in the groups. The Sabrata treatment group had more than double the number of the Gharian treatment group. It is suggested that with a larger number of participants a greater variety of reading strategies may be used, which could have led to the choice of more correct adversatives.

A second explanation could be related to the level of information the Sabrata participants had about adversative conjunctions. There was a possibility that the Sabrata treatment group could have got more information about adversatives from their former teacher(s). Most English teachers know that conjunctions such as *never-theless* and *however,* for instance, are difficult to use both in reading and writing, so they may give their students more time and practice when teaching this conjunctive type.

Another explanation could be that the Sabrata treatment group correctly chose a high level of adversative conjunctions by chance. In multiple-choice tests, students could circle one of the given options even if they are not confident of its correctness. This explanation was supported by the interview results. Adversative conjunctions were the least often correctly justified by the participants, as shown in Chapter Six.

Finally, it is interesting to observe that the reading intervention programme, which explicitly taught conjunctions and their relation to reading comprehension, had

the same impact on the reading comprehension of the treatment groups in the Gharian and Sabrata English Departments. Both groups benefited from the programme regardless of the distance between the two departments and the different sample sizes of the groups. These findings suggest that the explicit teaching of conjunctions to English foreign language readers could facilitate their reading comprehension if they learn to identify conjunctions, recognise their function and use them appropriately. So it can be claimed that this study's findings could be generalised to English foreign language readers in other Libyan universities and other foreign students with the same level of English language proficiency. Even students who study foreign languages such as French, German, Italian and Spanish could benefit from conjunctions in their reading comprehension. Many studies reviewed in this thesis emphasise the positive impact of conjunctions on the reading comprehension of the languages mentioned above.

In summary, the findings of this study are in agreement with the majority of studies mentioned in the literature review in Chapter Four, which found that all conjunctions facilitate reading comprehension. However, it appeared that some conjunctive types are more facilitative of reading comprehension than others. This requires explicit teaching of conjunctions with special focus on the more difficult types. Teaching conjunctions in reading courses is further discussed in the pedagogical implications section in the next chapter.

Chapter Eight

Conclusions and pedagogical implications

8.1. Research procedure and findings in brief

This study investigated the impact of conjunctions on the reading comprehension of fourth year English department students studying English as a foreign language in the English Departments in two Libyan universities. Upon checking the previous reading comprehension results of these students, it was observed that their reading comprehension was poor. Various causes could be behind this. This study examined the students' failure to use one of the textual cohesive features (i.e. conjunctions) in their reading performance. The researcher assumed that explicit teaching the target students conjunctions and their relation to reading comprehension could contribute to the improvement of their reading comprehension.

To answer the thesis questions (see Chapter Five), a multi-method approach was adopted. This approach included a questionnaire, experimentation, and interviews. Fourth year students in the Gharian English department were pre-and post tested and the Sabrata students were post-tested only. After assigning the students randomly to comparative and treatment groups the treatment groups in both departments were explicitly taught conjunctions and their facilitating role in reading comprehension for twelve weeks. A reading intervention programme was prepared with the assistance of self-questionnaire findings which all study groups completed before the start of the experiments.

Directly after the completion of the reading intervention programme sessions all study groups were post-tested. The measuring instruments included testing the participants' ability to identify conjunctions, recognise their functions, use them in

their reading comprehension. Finally, the treatment group participants were interviewed after they completed their reading comprehension test. They were asked to justify their choices to be sure that they actually benefited from their attending of the reading intervention programme and did not merely random answers.

The collected data were analysed using descriptive and inferential statistics. Frequencies, percentages and means were calculated using Excel and SPSS computer software. By using t-test and chi squared analyses many significant results were found. These results were presented and illustrated using tables and graphs as shown in Chapter Six.

The post-test results of the Gharian intervention groups revealed that the treatment group showed a significant improvement in reading comprehension in comparison with the comparative group. In agreement with this, the only post-test results of Sabrata intervention groups suggested that the treatment group showed a significant improvement in reading comprehension improvement in comparison with the comparative group.

8.2. Research conclusion

An overview of the research findings suggest the conclusion that all conjunctives which join independent sentences in written text facilitated the reading comprehension of the fourth year English department students in two Libyan universities studying English as a foreign language. The treatment groups in the study benefited from the presence of conjunctions in written text because the conjunctives make explicit the semantic relations existing in the text. They actually signal these relations and guide readers to the correct meaning in a minimum of time and with less cognitive effort.

However, it appeared that some conjunctive types were more useful to our participants' reading comprehension than others. In the Gharian English Department, additive conjunctives were found to be the most facilitative type for the participants' reading comprehension and adversatives were the least. Causals and temporals were second and third most facilitative respectively. In the Sabrata English Department, the participants found the additives the most facilitative conjunctive type and the causals gave the lowest scores in the reading comprehension post-test, even though no statistically significant differences between the causals, temporals and the adversatives were found.

By comparing the levels of difficulty of conjunctive types in the Gharian and Sabrata treatment groups it was concluded that the additives were the most facilitative type, and the temporals and the causals came second and third respectively. The level of similarity between the Gharian and Sabrata treatment groups in relation to the conjunctive type's facilitative role was found to be 75 per cent. The adversative conjunctives were found the most difficult by the Gharian treatment group, with significantly low mean scores in comparison with the other conjunctive types.

After three months of the explicit teaching of conjunctions, the participants of the treatment groups in the Gharian and Sabrata English Departments were able to identify conjunctions, recognise their function and use them effectively in their reading comprehension. Similar significant improvements were achieved by both treatment groups with the exception of the post-test identification of conjunctions by the Gharian treatment group. The Sabrata treatment group had significantly lower results for the post-test identification of conjunctions in comparison with the Gharian treatment group, even though both treatment groups showed significantly higher post-test results than those of the comparative groups.

The comparative groups in the Gharian and Sabrata English Departments who were exposed to the traditional reading programme failed to make significant progress in comparison with the treatment groups in all the post-test topics: the identification of conjunctions, the function recognition of conjunctions and reading comprehension.

This suggested that the reading intervention programme which explicitly taught conjunctions and the way they signal the semantic relations in text was more effective than the traditional syllabus for the study participants' reading comprehension. By learning how to recognise the semantic relations and infer meaning by using conjunctions the participants in the treatment groups managed to achieve significantly better results in their post-test. These findings have important pedagogical implications which are discussed next.

8.3. Pedagogical implications of the study

As mentioned above, the findings of this study suggested that the explicit teaching of textual cohesive conjunctions had a positive impact on the reading comprehension of Libyan university students studying English as a foreign language. All types of conjunctions including additives, adversatives, causals and temporals were found to be useful in the reading comprehension of the thesis participants.

Since the findings of this study are in agreement with many research results investigating the same topic as mentioned in the preceding chapter, it is suggested that these results could be useful for students studying English as a foreign language. The reading comprehension of these students could be improved if they were explicitly taught conjunctions in their reading comprehension courses.

Based on the findings of this study, teachers and university professors teaching English as a foreign language are recommended to focus on teaching textual cohesive conjunctions in reading comprehension lessons. Nunan (1999, 260) recommends that "cohesive relationships should be taught explicitly. In particular, logical relationships should be taught in academic reading programmes".

Many teaching techniques have been suggested for teaching how to identify conjunctions, recognise their semantic function, and use them as signposts to tell the reader "where he is going in relation to where he has come from" (Williams 1983, p.47). Thus, to benefit from the explicit presence of conjunctions in written texts, the following steps are suggested when preparing any classroom activity for the teaching of conjunctions:

1. Identifying conjunctions, which covers the recognition of their forms, meanings and the ability to distinguish them from other language items such as coordinators, subordinators and prepositions.

2. Recognising the semantic function of conjunctions, which covers the ability to relate the conjunctive items under scrutiny to their conjunctive types, i.e. whether the conjunctive is an additive, adversative, causal, or temporal. As Williams (1983, p.47) suggests, "the efficient reader is able to draw on his knowledge of *families* (and sub-families) of [conjunctions]". "These are fundamental meaning elements and of paramount importance for comprehending, as they indicate to the reader the type of meaning relation intended by the author" (Chapman 1983, p.87). This is sometimes difficult because, as mentioned in Chapter Three, some conjunctions can express more than one semantic function. Conjunctives such as *then* and *since* could be used as either causal or temporal conjunctions. It is the responsibility of the teacher to alert his/ her students to these details.

3. Readers need to know how to use these conjunctions in their reading procedure. This stage has been proven to be difficult for many foreign language students since many of them can recite the rules which govern the use of conjunctions, "but to master the appropriate use of conjunctions is "extremely difficult" Goldman and Murray 1992, p.735). It is important for students to know that conjunctions explicitly signal certain semantic functions in the linked sentences and "confirm that the sentence that has been read is to be connected with the following sentence and that it is the meanings that are to be integrated" (Chapman 1983, p. 87).

Conjunctions operate locally by joining two adjacent independent sentences and globally by joining, for example, a conclusive sentence or a paragraph with other preceding sentences or paragraph(s). It has been found by many linguists that foreign language students can easily integrate the concepts included in adjacent sentences, but they usually fail to do so when a global meaning needs to be extracted (Cohen et al. 1988). This requires special instruction by teachers to train their students to detect intra-sentential as well as inter-sentential relationships in order to compose a coherent meaning of the text. Basturkmen (2002, p.53) emphasises the importance of "drawing students' attention to typical clause relations and macro-patterns in English."

8.3.1. Conjunction teaching approaches

The teaching of conjunctions could be achieved by exploiting many classroom techniques. Chapman (1983), Williams (1983), Gairns and Redman (1986), Chung (2000), Basturkmen (2002), and Ozono and Ito (2003) have proposed various different techniques for teaching conjunctions and using them in reading comprehension.

8.3.2. Teaching individual conjunctions technique

Gairns and Redman (1986, p.71) highlight that conjunctions are "vital in comprehension, and unless they are understood, contextual guesswork may become almost impossible." They provide a useful classroom activity which could contribute to the facilitation of reading comprehension if they are applied appropriately. The activity suggested was designed to teach the adversative conjunctions *though*, *although* and *even though*. This activity starts with alerting students to the meaning of the conjunctive items and the position they occupy between clauses or sentences followed by an exercise to confirm that students understand their meaning. Another stage of the activity includes a useful drill prepared to train students how to deduce meaning of unknown items in a text with the assistance of conjunctions. For example, students are asked to guess the meaning of the colloquial word *swotted* in the sentence (he failed his exam though he *swotted* hard for it before. By recognising the meaning and the function of the conjunctive *though* students can easily guess the meaning of the italicised word. (See the complete activity in appendix 5.2)

Even though activities such as the one mentioned above are considered easy by many teachers since conjunctions are used to connect two simple clauses, they can be used at initial stages to prepare students for tackling longer and more difficult texts. This is also in agreement with Ozono and Ito's (2003, p.294) recommendation, that conjunctions "should be approached, not in the lump, but individually." This is because conjunctions vary in difficulty as the results of this thesis in Chapter Six suggest. In some cases teachers need to be selective in their conjunctive teaching and focus primarily on the difficult conjunctions as recommended by many linguists. Conjunctions with low frequency such as *nevertheless* are found to be difficult for

foreign language students. Various approaches such as the cloze techniques can be used when dealing with conjunctions on the text level, as explained next.

8.3.3. Cloze procedure technique

Chapman (1983) stressed the importance of training students, especially young learners, how to recognise and distinguish between simple or monosyllabic conjunctions such as *and, yet, so* and what he called multi-word conjunctions such as *at first, at last*, and *by this time*. For Chapman (1983, p.88), it is vital that students "achieve a level of proficiency at which an n-word conjunction is perceived not as separate words, but as one item. The single unit 'at the same time' is perceived as a single cueing a fluent reader to make a particular type of semantic linkage."

Chapman (1983) suggested the use of the cloze procedure and its modifications such as rational cloze and multiple-choice rational cloze for teaching conjunctions, which he described as a very versatile teaching technique. This procedure provides the teacher "with a rich source of activity material. Teachers could, for instance, take their present reading material, analyse it for the occurrence of the cohesive tie [like conjunction] ..., and by judicious deletion, make cloze type activity" (Chapman 1983, p.125).

Better results could be achieved by varying the material and upgrading the level of difficulty by adjusting the number and spacing of deletions. Here it would be worth noting a fundamental point. The cloze procedure is not used for testing but for teaching the textual cohesive conjunctions. Readers are encouraged to suggest the appropriate conjunctions which complete the meaning of the joint text elements and achieve coherence, which leads to comprehension. (See appendix 5.4 for an example of cloze procedure activity)

8.3.4. Symbol system technique

Based on the findings of many studies which have revealed that cohesion contributes to the comprehension of written text, Williams (1983) suggested important techniques for teaching cohesive ties. He emphasised that "the reader's ability to interpret a particular textual element depends on his ability to interpret other element. The elements are tied: thus we talked of cohesive ties in text" (ibid. p.35). Williams dedicated a separate section to conjunctions, which are classified by Halliday and Hasan (1976) as one of the cohesive ties.

Williams (1983, p.39) stressed that "much attention should be given to this category of tie [i.e. conjunctions] in teaching reading". This is because many students are unable to distinguish conjunctions from other language categories such as coordinators, subordinators, and prepositions.

Based on this, Williams (1983, p.47) emphasised the importance of teaching how to recognise conjunctions, identify their function, and to be able to relate them to their appropriate conjunctive type. The reader should "know that *for this reason* and *consequently* belong to the same family, but *in other words* and *nonetheless* to different families".

Since conjunctions are abstract concepts, which makes it difficult for readers to make a mental image of them, Williams (1983, p.47) suggested "a system of symbols (and abbreviations) to give graphic reality to the abstract concepts being expressed" for teaching conjunctions. Symbols borrowed from sciences and mathematics were used to represent conjunctions. He suggested few steps which can be used in classroom activity as follows:

1. A few examples of symbols were given such as

\+ Additive proper as *moreover*

==> Result as *consequence*

( ) Afterthought as *incidentally*

 Negative as *alternatively*

And abbreviations in common use such as

e.g. Exemplificatory *for instance, for example*

i.e. Expository *in other words*

2. These symbols are marked either above the conjunctions mentioned in the text or on a transparent sheet which can be presented to students using an overhead projector.

3. Once students recognise the conjunctions, absorb their function, and the conjunctive type they relate to, the symbols are erased except for rare and difficult items. At this stage, students are alerted to other language items presented in the text which are similar in form to conjunctions but have different function like coordinators and subordinators.

4. Students are supplied with another text and in small groups they are asked to underline the conjunctions mentioned in the text. This gives them the opportunity to discuss the function of conjunctions and familiarise themselves with using the symbols they learned by marking the newly mentioned conjunctions.

5. Finally, students are provided with unmarked texts and asked to identify conjunctions and recognise their functions. In pairs or in groups, they are given the chance to discuss the semantic relations existing in the text and how they are made explicit by different types of conjunctions. (An example of a text marked with symbols can be found in appendix 5.3)

It is worth noting here that texts with broader subject matter are recommended so as to give students enough material to practise the steps mentioned above. The

level of difficulty should also be considered to ease the struggle new vocabulary could create.

8.3.5. Jumbled sentences approach

"Jumbled sentences" is another approach Williams (1983) suggested for teaching conjunctions. In this task, a text containing different conjunctive types is cut up into independent sentences and mixed together to upset their coherence. After marking the sentences according to their order (e.g. by numbering them) in the original text, students are asked to reorder these sentences to give a coherent text by using conjunctions. Students can be asked to reorder the jumbled sentences by using "linguistic cues, for example, sequence words such as 'next', 'afterwards', or causal words such as 'therefore' and 'because" (Wray and Medwell 1995, p.114). It is recommended that students work in pairs or in groups to have a better chance of discussing the function of conjunctions.

This activity could be broadened to include asking students to reorder jumbled paragraphs. This activity involves giving students a complete text in a form of jumbled paragraphs and the students are asked to arrange these paragraphs "into an order which makes sense, and which they can justify by reference to the conceptual or linguistic flow of the text" (Wray and Medwell 1995, p.146). Again, temporal conjunctions, for instance such as *first, second* and *finally,* could be used as clues to reorder the text paragraphs.

Focusing on the semantic relationships which are made explicit by the presence of conjunctions does not mean that other implicit semantic relationships are ignored. On the contrary, these relationships are as important as the relationships which are made explicit by conjunctions. While practicing reading, students should

be alerted to these relationships to have a complete coherent understanding of the text.

In addition, in normal reading, conjunctions are not marked or highlighted. This means that the activity mentioned above should not last for a long time. Students should be trained to minimise their dependence on the marked conjunctions and push forwards toward recognising conjunctive relationships without artificial assistance. Geva (1992, p.745) recommended that students should be trained to "infer those relations that are not marked in the text."

In these tasks pair work and group work are recommended to achieve the following objectives, as reported by Williams (1983, p.51):

- It puts the responsibility for learning where it belongs: in the learner's head.
- It releases the teacher from a centre-stage role, and thus enables him to circulate among groups - advising, motivating, disambiguating, checking progress.
- The majority of the lesson is spent with learners *reading* - not listening or speaking.
- It focuses more attention on the cognitive processes involved in reading, and less on the 'right-or-wrong' product. It enables learners to learn from each other strategies of handling text that they can incorporate into their own overall strategies.

Many other conjunction teaching approaches derived from the techniques mentioned above could be used to teach conjunctions and their impact on the reading comprehension of foreign language students. For example, students could be asked to reinstate conjunctions removed from an authentic written text without the assistance of their teacher, or they could be asked to choose the most appropriate conjunction from a list of conjunctions given in the form of multiple-choice.

8.3.6. Reading comprehension activity

The teaching of conjunction techniques as indicated above directly focusses on teaching students how to use conjunctions in reading comprehension. The following suggested approach focuses on understanding a written text by using conjunctions together with other reading skills and strategies; however, conjunctions are the major explicit cohesive items to be used in extracting meaning from the text. This approach is adopted from Salimbene and Widdowson (1986) was applied by the researcher in the intervention programme and yielded satisfactory results as suggested in the research findings mentioned in the previous chapter.

The first step of this activity starts with the selection of an expository text with the features mentioned in Chapter 5.7.1.1.5: for example, the suitability of the topic to the students, level of language difficulty, and the time allocated to the activity have to be considered. Every student is recommended to have his/her own copy of the text; nevertheless, students are encouraged to work in pairs or groups and practise all activities together in order to gain the maximum benefit from them. The role of the instructor (i.e. the teacher) is limited to guiding the class, eliminating outside distraction, and controlling the transition from one step to another to save time.

The second step begins with writing the title of the passage on the blackboard and asking students to write down in groups their prediction of the topic in a few lines. Their feedback is written on the blackboard in brief sentences. These sentences are checked one by one when reading the text starts. Students could be asked about their individual background relevant to the text topic. For example, information they know about "dreams". In the third step, students are asked to skim the text searching for specific information such as names or dates and to scan it quickly to see whether the points written on the blackboard exist in the text. New ideas could be added and

irrelevant ones deleted. After that, students are asked to underline all the connective items mentioned in the text. Their position is checked and the difference between the conjunctions which work globally and the ones which work locally should be highlighted. The teacher is advised to alert his students to the distinction between normal logical connectives and conjunctions. Again, students are instructed to underline the sentences which are joined by connectives. Verification is practised of whether these joined sentences are compound, complex, or independent from each other. The items which link independent sentences are called conjunctions. This is what distinguishes them from logical connectives.

Once they are able to identify conjunctions, students are asked to classify them according to their semantic function - whether they are additive, adversative, causal, or temporal.

The following step is asking students to read the text individually and silently. In this task, time is calculated and any difficult vocabulary should be underlined. Difficult vocabulary is checked and its meanings in English are searched for either by guessing or by consulting a dictionary. Using L1 to translate the difficult vocabulary should be avoided if possible. In all cases, confirmation of the correct meaning is the role of the instructor, since misunderstandings could always arise.

For the last step, to be sure that students understand the text, comprehension questions could be prepared either by the teacher or by the students themselves. These questions could take the form of Yes/No questions, F/T questions, Multiple-choice questions or in the form of rational cloze. It is recommended that students answer the questions individually first and after that they answer them in pairs or groups.

In summary, teachers have a variety of techniques to choose from. It is the responsibility of the teacher to decide which approach is suitable for his/her students.

This depends, of course, on the level of students' language proficiency, the availability of the materials, and the time allocated to the reading comprehension course. Modified texts which are jammed with conjunctions are not useful materials and texts with only a few conjunctions are usually difficult for foreign language students to understand. It is important to have enough exercises and short quizzes to evaluate the progress of students. This, indirectly, assesses the approach chosen and gives the chance to change the current technique if significant progress is not achieved.

Drawing students' attention to the conjunctions which operate between adjacent sentences to form local coherence and to the ones which operate globally is very important. Full understanding of written text can only be achieved by comprehending all pieces of information constructing the body of the text. Students,

> Must recognize the signal as a signal when it is present in the text; they must understand the general functions of the signal and its usage conditions; and they must be able to instantiate those functions in the specific text in which the signals occur.
>
> (Goldman and Murray 1992, p.505)

Reading curriculum designers are recommended to consider these approaches and include them in future reading programmes, since they have been found to be useful for better reading comprehension.

8.4. Limitations of the study

1. This study was limited to the examination of conjunctions that join independent sentences. Other connectives which join compound and complex sentences were excluded from the study since they do not contribute to the cohesion of the text, as Halliday and Hasan (1976) argue. Furthermore, other cohesive devices such as

reference, substitution, ellipsis and lexical cohesion were beyond the scope of this study.

2. The findings of the study could be generalised only to fourth year English department students in Libyan state universities. Students studying English in private universities and students who are at lower levels are not included because the sample was chosen from the fourth year only. However, the study findings have emphasised the importance of conjunctions for reading comprehension, and teachers of reading comprehension courses are recommended to explicitly focus on them when teaching reading at all foreign language learning levels.

3. Given the scant information students already had about conjunctions and their role in reading comprehension, three months of the explicit teaching of conjunctions was not sufficient to achieve the hoped-for results. Even though the treatment groups achieved significantly better results than the comparative groups it would be possible to achieve even better results if more time and practice were available.

4. In addition to the questionnaire which was given to the intervention groups at the beginning of the intervention programmes, asking them about their attitudes towards conjunctions and their relation to reading comprehension, more useful data could be collected if the participants were asked to complete another questionnaire asking them about their attitudes towards the whole intervention programme including the reading programme. After the completion of the study phases it would be possible to ask the treatment groups to evaluate the procedure of the intervention programmes and the materials used for testing and teaching. The findings could then be considered in future research.

8.5. Suggestions for further study

It is suggested that future research could cover all connectives, including the ones which join segments of a clause and a sentence such as coordinators and subordinators. It is useful for foreign language readers to learn the functions of these items since most FL readers focus more on local text relations. It was observed that in many cases the distinction between connectives or what are sometimes called logical connectives is not easy for FL students. What is important is the linking function and the semantic relation the connecting item signals. As Chapman (1983) highlighted, in many cases the distinction between the connecting items is arbitrary and a matter of writing style. (See Chapter Three for more details)

Investigating all cohesive devices in relation to reading comprehension is another suggestion. Reference, substitution, ellipsis and lexical cohesion as well as conjunctions could be studied as one package, since the teachers of reading skills find it difficult to focus on certain cohesive devices while ignoring the others. Cohesion is an interesting topic to study. A hated debate has been underway between linguists about the necessity of cohesive devices to the coherence of text. So far there is no consensus on the actual relationship between cohesion and reading comprehension, especially for S/FL readers.

One semester is not enough to explicitly teach conjunctions and expect significant results, especially if the participants' background knowledge about conjunctions is limited. It is suggested that more time needs to be given to guarantee positive results. One academic year could be enough for teaching an intervention programme covering everything about conjunctions and their relation to reading comprehension. Things do not always run smoothly: public holidays and other

unexpected interruptions have to be taken into consideration when researchers prepare their research methodologies and plans.

BIBLIOGRAPHY

Alebsi, T. A., 2002. *The impact of programme for teaching reading comprehension skills on female Saudi students in King Abdulaziz University in Al-Madina Al-Munawara*. Thesis (PhD). University of Hull, UK.

Anderson, N., 1991. Individual differences in strategy use in second language reading and testing. *Modern Language Journal*, 75, 460-472.

Basturkmen, H., 2002. Clauses relations and macropatterns: Cohesion, coherence and the writing of advanced ESOL students. *English Teaching Forum,* 40 (1). Available from: http://exchanges.state.gov/forum/vols/vol40/no1/p50.htm

Bensoussan, M. and Ramraz R., 1984. Testing EFL reading comprehension: Using a multiple-choice rational cloze. *Modern Language Journal,* 68, 230-39.

Blakemore, D., 1987. *Semantic constraints on relevance*. UK: Basil Blackwell Ltd.

Blakemore, D., 1992. *Understanding utterances*. UK: Oxford, Mass.

Borg, W. R. and Meredith D. G., 1979. *Educational research: An introduction*. New York: Longman.

Bouma, G. D. and Atkinson G. B., 1995. *A handful of social science research*. UK: Oxford University Press.

Brown, D., 1994. *Teaching by principles: An interactive approach to language pedagogy,* Upper Saddle River, Prentice Hall Regents.

Brown, G. and Yule G., 1983. *Discourse analysis*. UK: Cambridge University Press.

Bryman, A., 1989. *Research methods and organisation studies*. UK: Unwin Hyman Ltd.

Bryman, A., 2001. *Social research methods*. UK: Oxford University Press.

Campbell, D. T. and Stanley J., 1972. *Experimental and quasi-experimental designs for research*. USA: Chicago, Rand McNally Publishing Company.

Caron, J., Micko H. C. and Thûring M., 1988. Conjunctions and the recall of composite sentences. *Journal of Memory and Language*, 27, 309-323.

Carrell, P. L., 1982. Cohesion is not coherence. *TESOL Quarterly,* 16 (4), 479-488.

Carrell, P. L., 1987. A view of written text as communicative interaction. Implication for reading in a second language. *In*: J. Devine, P. Carrell., and D. Eskey, eds. *Research in reading in English as a second language*. USA: Washington D. C.

Carrell, P. L., 1988. Interactive text processing: Implications for ESL/second language reading classroom. *In*: J. Devine, P. Carrell and D. Eskey, eds. *Interactive approaches to second language reading*. UK: Cambridge University Press.

Carrell, P. L., 1988. Introduction: Interactive approaches to second language reading. *In*: J. Devine, P. Carrell, and D. Eskey, eds. *Interactive approaches to second language reading*. UK: Cambridge University Press.

Carrell, P. L., 1989. Metacognitive awareness and second language reading. *Modern Language Journal*, 73 (2), 121-34.

Carston, R., 1993. Conjunctions, explanation and relevance. *Lingua,* 90, 27-48.

Chapman, L. J., 1983. *Reading development and cohesion*. UK: Heinemann Educational Books.

Chaudron, C. and Richards J., 1986. The effect of the discourse markers on the comprehension of lectures. *Applied Linguistics,* 7 (2), 112-127.

Chomsky, N. 1957. *Syntactic structures*. Mouton, The Hague.

Chung, J. S., 2000. Signals and reading comprehension- theory and practice. *System,* 28 (2), 247-259.

Cobb, D., 1974. *Constructive comprehension*. London: Longman Group Limited.

Cohen, L., Manion L. and Morrison. K., 2000. *Research methods in education*. 5th ed. New York: Routledge.

Cohen, A. D., 1986. Mentalistic measures in reading strategy research: Some recent findings. *The ESP Journal, 5* (2), 131-145.

Cohen A., Hillary G., Phyllis R., Rosenbuam C., Jonathan F. and Jonathan F., 1988. Reading English for specialized purposes: Discourse analysis and the use of student informants. *In*: P. Carrell, J. Devin, and D. Eskey, eds. *Interactive approaches to second language reading*. UK: Cambridge University Press.

Cohen, A. D., 1998. *Strategies in learning and using a second language*. New York: Longman.

Cooper, M., 1984. Linguistic competence of practical and unpractical non-native readers in English. *In*: C. Alderson, and A. H. Urquhart, eds. *Reading in a foreign language*. Longman Group Limited, 122-125.

David H., 1974. Testing reading comprehension in ESL/EFL: Background and current state of the art. *In*: E. M. Anthony, and J. C. Richards, eds. *Reading: Insights and approaches*. Singapore University Press; SEAMEO, Regional English Language Centre.

Davies, F., 1995. *Introducing reading*. UK: Penguin Group.

De Beaugrande, R. and Dressler, W., 1981. *Introduction to text linguistics*. London, New York: Longman.

Degand, L., Lefevre N. and Bestgen Y., 1999. The impact of connectives and anaphoric expressions on expository discourse comprehension. *Document Design,* 1 (1), 39-51.

Degand, L. and Sanders T., 2002. The impact of relational markers on expository text comprehension in L1 and L2. *Reading and Writing: An Interdisciplinary Journal,* 15, 739-757.

Devine J., Carrell P. and Eskey D., eds., 1987. *Research in reading in English as a second language*. USA: Washington.

Dockrell, W.B., 1988. Ethical consideration in research. *In*: J. P. Keeves, ed. *Educational research, methodology, and measurement: An international handbook.* England : Oxford, Pergamon Press.

Erman, B., 1987. Pragmatic expressions in English: A study of *you know, you see,* and *I mean* in face-to-face conversation. Stockholm: Almqvist and Wiksell.

Eskey, D. E., 1988. Holding in the bottom: An interactive approach to language problems of second language readers. *In*: J. Devine, P. Carrell, and D. Eskey, eds. *Interactive approaches to second language reading*. UK: Cambridge University Press.

Fischer, K. 1998. Validating semantic analysis of discourse particles. *Journal of Pragmatics,* 29,111-127.

Fraser, B., 1998. Contrastive discourse markers in English. *In*: A. H. Jucker and Y. Ziv, eds.. *Discourse markers: Descriptions and theory.* Amsterdam: Banjamins.

Fraser, B., 1999. What are discourse markers? *Journal of Pragmatics,* 31 (7), 931-952.

Gairns, R. and Redman S., 1986. *Working with words: A guide to teaching and learning vocabulary*. UK: Cambridge University Press.

Geva, E., 1986. Reading comprehension in a second language: The role of conjunctions. *TESOL Canada Journal,* Special Issue, 1 (NOV), 85-96.

Geva, E., 1992. The role of conjunctions in L2 text comprehension. *TESOL Quarterly,* 26 (4), 731-747.

Ghadessy, M., 1983. Comments on Patricia Carrell's "Cohesion Is not Coherence". *TESOL Quarterly*, 17 (4), 685-687.

Givon, T., 1995. Coherence in the text and coherence in the mind. *In*: T. Givon and A. Mortan, eds. *Coherence in spontaneous text*. Amsterdam: J. Benjamins.

Goldman, S. R. and Murray J. D., 1992. Knowledge of connectors as cohesion devices in text: A comparative study of native-English and English-as-a-second language speakers. *Journal of Educational Psychology,* 84 (4), 504-519.

Goodman, K. S. 1971. Reading: A psycholinguistic guessing game. *In:* H. Singer and R.B. Ruddell, eds. *Theoretical Models and Processes of Reading*. International Reading Association, Newark, Belaware.

Gough, P. B., 1972. One second of reading. *In*: J. F. Kavanagh and I. G. Mattingly, eds. *Language by ear and by eye; the relationship between speech and reading.* Cambridge: Mass., MIT Press.

Grabe, W. and Stoller F. L., 2002. *Teaching and researching reading*. UK: Pearson Education Limited.

Gronlund, N. E., 1976. *Measurement and evaluation in teaching.* 3rd ed. New York: Macmillan Publishing Co.

Gutwinski, W., 1976. *Cohesion in literary texts*: *A study of some grammatical and lexical features of English discourse*. The Hague: Mouton.

Halliday, M. A. K. and Hasan, R., 1976. *Cohesion in English*. London: Longman.

Halliday, M. McIntosh A. and Strevens P., 1964. *The linguistic sciences and language teaching*. London: Longmans.

Hansen, M. M., 1997. Alors and Donc in spoken French: A reanalysis. *Journal of Pragmatics,* 28, 153-187.

Harris, A.J. 1979. *How to teach reading: A competency based program*. New York: Longman.

Harrison, C., 2004. *Understanding reading development*. London: SAGE Publication.

Hasan, H. T., 1999. *Cohesion and coherence of the academic texts written by Yemeni learners.* Thesis (PhD). The University of Birmingham.

Hasan, R., 1964. *A linguistic study of contrasting features in the style of two contemporary English prose writers*. Thesis (PhD). University of Edinburgh.

Hasan, R., 1968. *Grammatical cohesion in spoken and written English: Part one*. London: University College, Longmans Green and Co Ltd.

Hedge, N., 1991. Reading and learning: An exploration of perception, approaches and strategies of overseas postgraduates using English for academic purposes. Thesis (PhD). University of Liverpool.

Hoey, M., 1991. *Patterns of lexis in text*. Oxford: Oxford University Press.

Hosenfeld, C., 1977b. Preliminary investigation of the reading strategies of successful and unsuccessful second language learners. *System*, 5, 110-23.

Irwin, J. W., 1980. The effects of explicitness and clause order on the comprehension of reversible causal relationships. *Reading Research Quarterly,* 15, 477-488.

Irwin, J. W., 1982. The effects of coherence explicitness on college readers' prose comprehension. *Journal of Reading Behaviour,* 14 (3), 275-284.

Johnson, P. and Pearson, D. P., 1982. *Prior knowledge, connectivity, and the assistant of reading comprehension*. Urbana: University of Illinois, Centre for the Study of Reading.

Jucker, A. and Ziv Y., eds., 1998. *Discourse markers: Descriptions and theory.* Amsterdam ; Philadelphia : J. Benjamins.

Knight, S. Padron Y. and Waxman H. C., 1985. The cognitive reading strategies of ESL students. *TESOL Quarterly*, 19, 789-792.

Knott, A. and Dale R., 1993. *Using linguistic phenomena to motivate a set of coherence relations*. Scotland: Edinburgh, Human Communication Research Centre, University of Edinburgh, 2 Buccleuch Place.

Knott, A. and Mellish C., 1996. A feature-based account of the relations signalled by sentence and clause connectives. *Language and Speech*, 39 (2-3), 143-183.

Knott, A. and Mellish C., 1996. A feature-based account of the relations signalled by sentence and clause connectives. *Language and Speech*, 39 (2-3), 143-183.

König, E. 1986. Conditionals, concessive conditionals and concessives: Areas of contrast, overlap and neutralization. *Traugott*, 229-246

Kranzler, G. and Moursund J., 1999. *Statistics for the terrified.* New Jersey: Prentice Hall, Upper Saddle River.

Kvale, S., 1996. *Interviews.* London: SAGE Publications, International Educational and Professional Publisher, Thousand Oaks.

LeCompte, M. and Preissle J., 1993. *Ethnography and qualitative design in educational research.* 2nd ed. London: Academic Press Ltd.

Leung, C.Y., 2002. Extensive reading and language learning: A dialogue study of a beginning learner of Japanese. *Reading in a Foreign Language,* 14 (1), 66-81.

Lincoln, Y. S. and Guba E.G., 1985. *Naturalistic inquiry*. London: SAGE Publications, International Educational and Professional Publisher.

Livenson, S. C., 1983. *Pragmatics.* Cambridge: Cambridge University Press.

Louwerse, M. M., 2000. *From cohesion in text to coherence in comprehension.* Thesis (PhD). University of Edinburgh, UK.

Lunzar, E. and Gardner K., 1979. *The effective use of reading.* UK: Heinemann Educational Books.

Macleod, M., 2004. *Types of reading.* Available from: http://fis.ucalgary.ca/Brian/611/readingtype.html [Accessed 17 March 2004]

MaKenna, M. C. and Layton, K., 1990. Concurrent validity of cloze as a measure of intersentential comprehension. *Journal of Educational Psychology*, 82, 372-377.

Martin, J. R., 1992. *English text: System and structure.* Philadelphia: John Benjamins Publishing Company,

Mason, B. and Krashen S., 1997. Extensive reading in English as a foreign language. *System,* 25 (1), 91-102

Mathewson, G., 1970. Towards a comprehensive model of affect in the reading process. *In*: H. Singer and R. Ruddell, eds. *Theoretical models and process of reading.* Newark, Del., International Reading Association.

McBurney, D. H., 2000. *Research methods.* 5th ed. USA: Wadsworth / Thomson Learning.

McDonough, J. and Shaw C., 1993. *Materials and methods in ELT.* UK: Oxford, Cambridge, USA: Blackwell.

Mcneil, P. and Chapman S., 2005. *Research methods.* 2nd ed. London: Routledge Taylor and Francis Group.

Millis, K. K., Graesser A. and Haberlandt K., 1993. The impact of connectives on the memory of expository text. *Applied Cognitive Psychology,* 7, 317-339.

Millis, K. and Just M., 1994. The influence of connectives on sentence comprehension. *Journal of Memory and Language,* 33, 128-147.

Millis, K. K. and Magliano J. P., 1999. The co-influence of grammatical markers and comprehender goals on the memory for short discourse. *Journal of Memory and Language,* 41 (2), 183-198.

Moe, A. J., 1978. Cohesion as a factor in the comprehensibility of written discourse. *The annual meeting of the national reading conference.* Florida: St. Petersburg.

Morgan, J. L. and Sellner M., 1980. Discourse and linguistic theory. *In*: R. J. Spiro, B. C. Bertram, and W. F. Brewer, eds. *Theoretical issues in reading comprehension.* Hillsdale, NJ: Lawrence Erbaum Associates.

Mosback, G. and Mosback V., 1976. *Practical faster reading.* UK: Cambridge University Press.

Munby, J., 1978. *Communicative syllabus design: A sociolinguistic model for defining the content of purpose-specific language programmes*. Cambridge University Press.

Murray, J. D., 1995. Logical connectives and local coherence. *In* R. F. Lorch Jr. and E. J. O'Brien, eds. *Sources of coherence in reading*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Murray, J. D., 1997. Connectives and narrative text: The role of continuity. *Memory and Cognition*, 25 (2), 227-236.

Nunan, D., 1992 *Research methods in language learning*. UK: Cambridge University Press.

Nunan, D., 1999. *Second language teaching and learning*. Canada: Heinle and Heinle Publishers.

Nuttall, C., 1996. *Teaching reading skills in a foreign language*. 2nd ed. Oxford: Heinemann English language Teaching.

Oppenheim, A. N., 1992. *Questionnaire design, interviewing and attitude measurement*. London and New York: Continuum.

Ösman, J. O., 1995. Pragmatic particles twenty years after. *In*: B. Warvik et al., *Organization in discourse: Proceedings from the Turku conference*, 1995. Anglicana Turkuensia, 14, 95-108.

Ozono, S. and Ito H., 2003. Logical connectives as catalysts for interactive L2 reading. *System*, 31, 283-297.

Oxford, R. and Crookall, D., 1989. Research on language learning strategies: Methods, findings, and instructional issues. *Modern Language Journal, 73,* 404-419.

Pallant, J., 2005. SPSS survival manual. 2nd ed. UK: Open University Press.

Qian, D. D., 2002. Investigating the relationship between vocabulary knowledge and academic reading performance: An assessment perspective. *Language Learning*, 52 (3), 513-536.

Quirk, R. and Greenbaum S., 1973. *A university grammar of English*. London: Longman Group UK Limited.

Quirk, R., Greenbaum S. Leech G. and Jan S., 1985. *A comprehensive grammar of the English language.* London: New York: Longman.

Rayner, K. and Pollatsek, A., 1989. *The psychology of reading*. Englewood Cliffs, NJ: Prentice Hall.

Redeker, G., 1990. Ideational and pragmatic markers of discourse structure. *Journal of Pragmatics*, 14(3), 367-381.

Redeker, G., 1991. Review article: Linguistic markers of discourse structure. *Linguistics*, 29(6), 1139-1172.

Rumelhart, D. E., 1977. Toward an interactive model of reading. *In*: S. Dornic, ed. *Attention and performance (VI)*. New Jersey: Lawrence Erlbaum Associates, Publishers, 573-603.

Rumelhart, D. E., 1984. Understanding understanding. *In*: J. Flood, ed. *Understanding reading comprehension*. Newark, Delaware: International Reading Research Association.

Rummer, R. Engelkamp J. and Konieczny L., 2003. The subordination effect: Evidence from self-paced reading and recall. *European Journal of Cognitive Psychology*, 15 (4), 539-566.

Salimbene, S. Widdowson H., 1986. *Interactive reading*. Cambridge: Newbury House Publishers.

Sanders, T. J. and Noordman L., 2000. The role of coherence relations and their linguistic markers in text processing. *Discourse Processes*, 29 (1), 37-60.

Schiffrin, D., 1987. *Discourse markers*. Cambridge: Cambridge University Press.

Schourup, L., 1985. Common discourse particle in English conversation: *Like, well, y'know*. New York: Garland.

Schourup, L., 1999. Discourse markers. *Lingua*, 107, 227-265.

Silverman, D., 1993. *Interpreting qualitative data*. London: Sage Publication.

Singal, M., 2001. Reading proficiency, reading strategies, metacognitive awareness and L2 readers. *The Reading Matrix*, 1 (1). Available from: (http://www.reading matrix.com/articles/singal/).

Smith, F., 1971. *Understanding reading*. 5th ed. New Jersey: Lawrence Erlbaum Association, Publishers, Hillsdale.

Smith, F., 1973. *Psycholinguistics and reading*. New York: Holt, Rinehart and Winston.

Smith, F., 1985. *Reading*. UK: Cambridge University Press.

Smith, F., 1994. *Understanding reading: A psycholinguistic analysis of reading and learning to read*. Hillsdale, N.J.: L. Erlbaum.

Smith, M. J., 1983. *The effects of cohesion on reading comprehension*. Thesis (PhD). University of Georgia, USA.

Smith, H. W., 1991. *Strategies of social research.* 3rd ed. USA: Holt Rinehart and Winston, Inc.

Song, M., 1998. Teaching reading strategies in an ongoing EFL university reading classroom. *Asian Journal of English Language Teaching,* 8, 41-54.

Steffensen, M. S., 1988. Changes in cohesion in the recall of native and foreign texts. *In*: J. Devine, P. Carrell, and D. Eskey D., eds. *Interactive approaches to second language reading.* Cambridge University Press.

Stoodt, B. D., 1972. The relationship between understanding grammatical conjunctions and reading comprehension. *Elementary English*, 49, 502-504.

Strong, R., Matthew J., Harvey F., and Gregory M., 2002. *Reading for academic success: Powerful strategies for struggling, average, advanced readers.* California: Corwin Press.

Stubbs, M., 1983. *Discourse analysis.* Chicago, IL: The University of Chicago Press.

Susser, B. and Robb T., 1990. *EFL extensive reading instruction: Research and procedure. JALT Journal*, 12, (2). Available from: http://www.kyoto-su.ac.jp/~trobb/sussrobb.html

Taboada, M., 2006. Discourse markers as signals (or not) of rhetorical relations. *Journal of Pragmatics,* 38 (4), 567-592.

Toohey, S., 2002. *Designing courses for higher education.* UK: Buckingham: Open University Press.

Townsend, D. and Bever T., 1978. Inter clause relations and clausal processing. *Journal of Verbal Learning and Verbal Behaviour*, 17, 509-521.

Townsend, D. J., 1983. Thematic processing in sentences and texts. *Cognition,* 13 (2), 223-261.

Traxler, M. J., Bybee M. and Pickering M., 1997. Influence of connectives on language comprehension: Eye-tracking evidence for incremental interpretation. *The Quarterly Journal of Experimental Psychology*, 50A (3), 481-497.

Tyler, R. W., 1949. *Basic principles of curriculum and instruction.* Chicago: University of Chicago Press.

Urquhart, A. H. and Weir C. J., 1998. *Reading in a second language: Process, product and practices.* New York: Longman.

Van Dijk, T. A., 1977. *Text and context. exploration in the semantics and pragmatic of discourse*. London: Longman.

Wallace, C., 1992. *Reading*. UK: Oxford University Press.

Widdowson, H. G., 1978. *Teaching language as communication.* Oxford: Oxford University Press.

Widdowson, H. G., 1983. *Learning purpose and language use.* Oxford: Oxford University Press.

Williams, R., 1983. Teaching the recognition of cohesive ties in reading a foreign language. *Reading in a foreign Language,* 1 (1), 35-52.

Willson, V.L. and Putnam R. R., 1982. A meta-analysis of pre-test sensitization effects in experimental design. *American Educational Research Journal,* 19 (2), 249-58.

Wolf, D. F., 1993. A comparison of assessment tasks used to measure FL reading comprehension. *Modern Language Journal,* 77, 473-89.

Wray, D. and Medwell J., 1995. *Literacy and language in the primary years.* London and New York: Routledge.

Zwicky, A., 1985. Clitics and particles. *Language,* 61, 283–305.

Appendices

Table of appendices

Appendix 1. Approval letters

1.1. Letter issued by the researcher asking Gharian English Department for their consent to use their students as participants of his study

الأخ / أمين قسم اللغة الإنجليزية / جامعة غريان

بعـــــد التحيـــــة

أفيدكم أنا الطالب / عبدالسلام عمار الناجح الموفد حالياً للدراسة في بريطانيا لنيل درجة الإجازة الدقيقة (الدكتوراة) في مجال التعليم بأن بحثي يتطلب تجميع معلومات من قسم اللغة الإنجليزية بجامعة غريان، لذلك أتمنى تعاونكم معي لكي أتمكن من تجميع المعلومات اللازمة من خلال تدريس طلبة السنة الرابعة لمادة الاستيعاب، وإجراء بعض الامتحانات التقييمية ذات العلاقة.

شاكراً لكم حسن تعاونكم معي

والســـــلام عليكم ورحمة الله وبركاته

مقدم الطلب /

عبدالسلام عمار الناجح

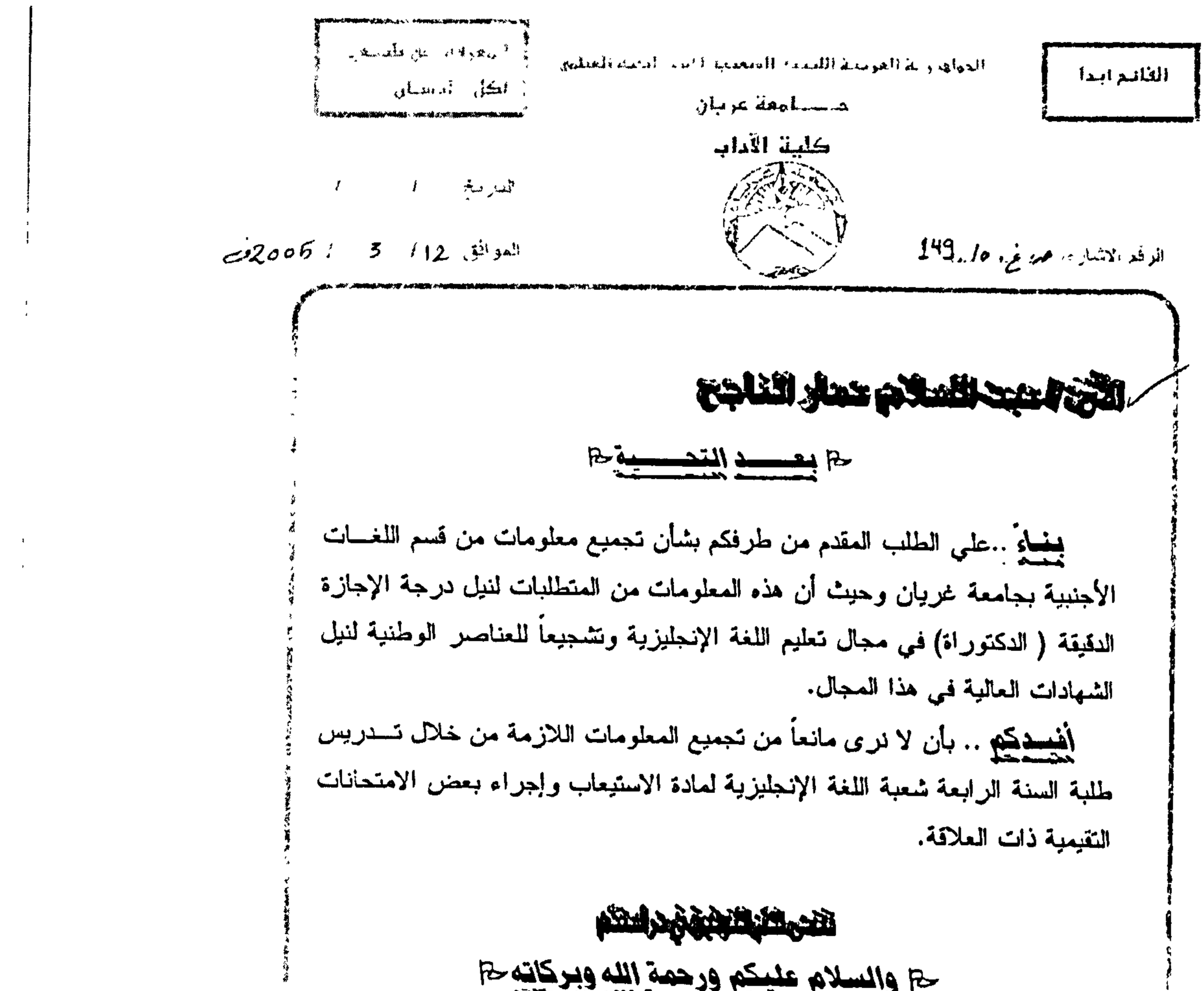
طالب دكتوراه

جامعة نيوكاسل

بريطانيا

11-12-2004

1.2. Approval letter issued by Gharian English Department



الجامعة الأسمرية الإسلامية
جامعة غريان
كلية الآداب

الفاتح ابدا

الرقم الاشاري: ع ف/ 149/10

التاريخ: 12/ 3/ 2006ف

الموافق: / /

تعميم على السادة
أعضاء هيئة التدريس

بعد التحية

بناءً ..على الطلب المقدم من طرفكم بشأن تجميع معلومات من قسم اللغات الأجنبية بجامعة غريان وحيث أن هذه المعلومات من المتطلبات لنيل درجة الإجازة الدقيقة (الدكتوراة) في مجال تعليم اللغة الإنجليزية وتشجيعاً للعناصر الوطنية لنيل الشهادات العالية في هذا المجال.

أفيدكم .. بأن لا نرى مانعاً من تجميع المعلومات اللازمة من خلال تدريس طلبة السنة الرابعة شعبة اللغة الإنجليزية لمادة الاستيعاب وإجراء بعض الامتحانات التقيمية ذات العلاقة.

والسلام عليكم ورحمة الله وبركاته

أ. عبد السلام عمار الناجح

أ. عبد الرحمن الأخضر
المدير المساعد للشئون الأدبية

صورة إلى:
- السيد عميد العامر
- أ.ع. الفرص / الشاهد النمالي

هاتف : 0424-61210-0424-61209

1.3. Letter issued by the researcher asking Sabrata English Department for their consent to use their students as participants of his study

الأخ / أمين قسم اللغة الإنجليزية / كلية العلوم الإنسانية

بجامعة الوثيقة الخضراء الكبرى / شعبة صبراته و صرمان

بعد التحية:

أفيدكم أنا الطالب / عبدا لسلام عمار الناجح الموفد حاليا للدراسة في بريطانيا لنيل درجة الإجازة الدقيقة (الدكتوراة) في مجال التعليم بأن بحثي يتطلب تجميع معلومات من قسم اللغة الإنجليزية بجامعتكم العامرة ، لذلك آمل تعاونكم معي لكي أتمكن من تجميع المعلومات اللازمة من خلال تدريس طلبة السنة الرابعة لمادة الاستيعاب و إجراء بعض الامتحانات التقييمية ذات العلاقة.

شاكرا لكم حسن تعاونكم معي

والسلام عليكم ورحمة الله وبركاته

مقدم الطلب

عبدالسلام عمار الناجح

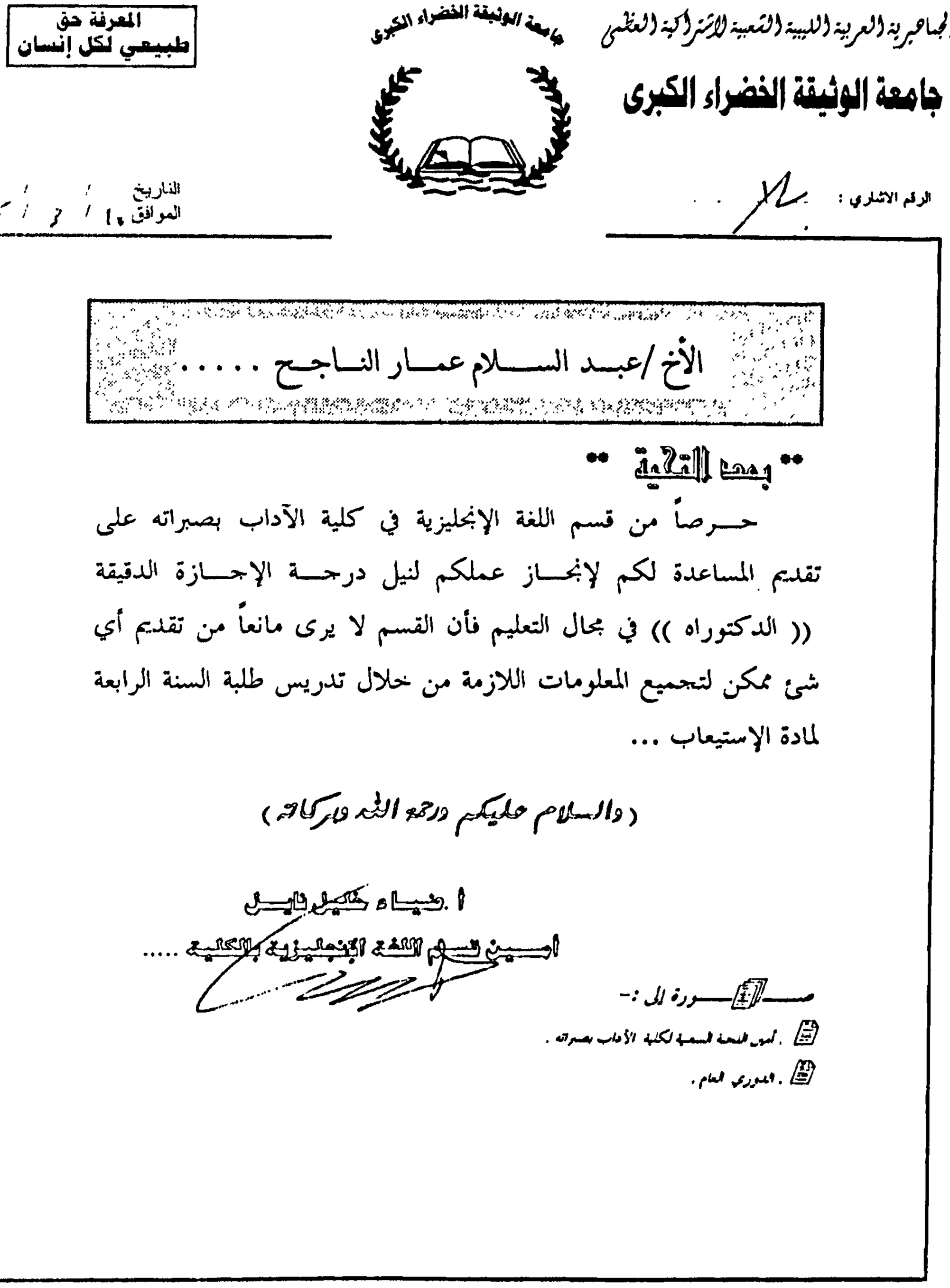
طالب دكتوراة

جامعة نيوكاسل / بريطانيا

7.3.05

ב

1.4. Approval letter issued by Sabrata English Department



المعرفة حق
طبيعي لكل إنسان

الجماهيرية العربية الليبية الشعبية الاشتراكية العظمى

جامعة الوثيقة الخضراء الكبرى

جامعة الوثيقة الخضراء الكبرى

الرقم الاشاري :

التاريخ
الموافق ١٤ / ٢ / ٢٠٠٥

الأخ /عبد السلام عمار الناجح .....

** بعد التحية **

حرصاً من قسم اللغة الإنجليزية في كلية الآداب بصبراته على تقديم المساعدة لكم لإنجاز عملكم لنيل درجة الإجازة الدقيقة ((الدكتوراه)) في مجال التعليم فأن القسم لا يرى مانعاً من تقديم أي شئ ممكن لتجميع المعلومات اللازمة من خلال تدريس طلبة السنة الرابعة لمادة الإستيعاب ...

(والسلام عليكم ورحمة الله وبركاته)

أ. ضياء خليل نايل
أمين قسم اللغة الإنجليزية بالكلية .....

صورة الى :-
. أمين اللجنة الشعبية لكلية الآداب بصبراته .
. المدير العام .

هاتف 622362 0273 البدالة: 620703_ 620085_0273 داخلي148_153 ص.ب 401

Appendix 2. Measuring the attitudes of the study participants towards conjunctions and their impact on reading comprehension

2.1. Attitudinal questionnaire

Attitudinal Questionnaire

Dear Respondents

I am studying a PhD in English language teaching at Newcastle University. The purpose of this questionnaire is to gather your views on the importance of conjunctions to reading comprehension. Your contribution in completing this questionnaire is very much appreciated since it will help in the designing of reading course materials.

Name: ..... Gender: (Male / Female)

Register No: .....

Reading background

1. Reading in English

a. How often do you read in English? (tick one)

Once a day □ Three times per week □ Once a week □ Never □

b. What kind of materials do you like to read more in English? (Please rank from 1—6)

Newspapers	
Magazines	
Stories	
Novels	
Poem	
Others .....(specify)	

2. I read materials related to academic studies in English. (tick one)

a. Most frequently □ b. Frequently □ c. Least frequency □ d. Never □

3. Which of the following features of reading procedures are important in helping you understanding a text? Please circle the box which matches your view most closely.

	Very important	important	not sure	little important	not important
a. I focus on the individual meaning of words.	□	□	□	□	□
b. I try to understand the main idea(s) of the text.	□	□	□	□	□
c. I use grammatical features as tense to get the meaning of the text.	□	□	□	□	□
d. I focus on the structure of the text	□	□	□	□	□
e. I use titles and headings to get the general meaning of the text.	□	□	□	□	□
f. I focus on the individual meaning of sentences.	□	□	□	□	□
g. I focus on conjunctions and the relations they impose on text.	□	□	□	□	□

4. I believe that conjunctions (i.e. connectives) like *and, yet, so, then* (tick one)

a. Facilitate reading comprehension □

b. Some of them facilitate reading comprehension □

c. They have no effect on reading comprehension □

d. They have negative effect on reading comprehension □

5. I can identify conjunctions (tick one)

Very easily □ **Easily** □

Not so easily □ **They are difficult to identify** □

6. I recognize the meaning of conjunctions (tick one)

Most of the time □ **Frequently** □

Some times □ **Rarely** □

7. I focus on conjunctions in my reading (tick one)

Most of the time □ **Frequently** □

Some times □ **Rarely** □

8. I understand the way conjunctions link sentences together to form meaningful text.

Most of the time □ Frequently □ (√one)

Some times □ Rarely □

9. I use conjunctions in predicting the meaning of sentences.

Most of the time □ Frequently □ (√one)

Some times □ Rarely □

10. When speaking in English I use conjunctions (√ one)

Most of the time □ Frequently □

Some times □ Rarely □

11. In my writing I find conjunctions (√ one)

Very easy to use □ Easy to use □

Not easy to use □ Difficult to use □

* Conjunction difficulty

12. I find additive conjunctions (e.g. *and, moreover, furthermore*) (√ one)

Very easy to use □ Easy to use □

Not easy to use □ Difficult to use □

13. I find adversative conjunctions (e.g. *but, nevertheless, yet, however*) (√ one)

Very easy to use □ Easy to use □

Not so easy to use □ Difficult to use □

14. I find causal conjunctions (e.g. *so, because, since*) (√ one)

Very easy to use □ Easy to use □

Not so easy to use □ Difficult to use □

15. I find temporal conjunctions (e.g. *then, next, first*) (√ one)

Very easy to use □ Easy to use □

Not so easy to use □ Difficult to use □

* English courses

16. I believe that English Department syllabus consists of **(√ one)**

a. **enough coverage on conjunctions**

b. **little coverage on conjunctions**

c. **no coverage on conjunctions**

17. My teacher usually presents **(√ one)**

a. **sufficient exercises on conjunctions**

b. **few exercises on conjunctions**

c. **no exercises on conjunctions**

.....

The end

2.2. Spreadsheet of the questionnaire data

1	Reading in English	Once a day	3 times per week	Once a week	Never		Miss Data	Total
		95 (47.5%)	65 (32.5%)	31 (15.5%)	3 (1.5%)		6 (3.3%)	
2	Reading academic material in English	Most frequently	Frequently	Least frequently	never			
		55 (27.5%)	96 (48%)	33 (16.5%)	12 (6%)		4 (2%)	
3	Focusing on meaning of words	Very important	Important	not sure	little import	Not important		
		104 (52%)	60 (30%)	7 (3.5%)	23 (11.5%)	6 (3%)	000	
4	Understanding main idea	Very important	Important	Not sure	little import	Not important		
		140 (70%)	48 (24%)	5 (2.5%)	4 (2%)	2 (1%)	000	
5	Using grammatical features in reading	Very important	Important	Not sure	little import	Not important		
		50 (25%)	66 (33%)	25 (12%)	43 (21.5%)	14 (7%)	2 (1%)	
6	Focusing on text structure	Very important	Important	Not sure	little import	Not important		
		35 (17.5%)	68 (34%)	26 (13%)	49 (24.5%)	15 (7.5%)	7 (3.5%)	
7	Using titles and headings	Very important	Important	Not sure	little important	Not important		
		72 (36%)	62 (31%)	11 (5 5%)	37 (18.5%)	11 (5.5%)	7 (3.5%)	
8	Focusing on sentence meaning	Very important	Important	Not sure	little important	Not important		
		45 (22.5%)	95 (47.5%)	21 (10.5%)	28 (14%)	9 (4.5%)	2 (1%)	
9	Focusing on conjunctions and their relations to reading comprehension	Very important	Important	Not sure	little import	Not important		
		80 (40%)	63 (31.5%)	21 (10.5%)	22 (11%)	13 (6.5%)	1 (.5%)	
10	Conjunctions' role in reading Comprehension	All types facilitate	Some facilitate	No effect	Negative effect			
		115 (57.5%)	60 (30%)	17 (8.5%)	7 (3.5%)		1 (5%)	
11	Identifying conjunctions	Very easily	Easily	Not so easily	Difficult to id			
		54 (27%)	74 (37%)	48 (24%)	23 (11.5%)		000	
12	Recognizing function of conjunctions	Most of the time	Frequently	Some times	Rarely			
		66 (33%)	40 (20%)	91 (45.5%)	3 (1.5%)		000	
13	Using conjunctions in reading comprehension	Most of the time	Frequently	Some times	Rarely			
		72 (36%)	41 (20.5%)	77 (38.5%)	10 (5%)		000	
14	Understanding the linking role of conjunctions	Most of the time	Frequently	Some times	Rarely			
		74 (37%)	45 (27%)	60 (30%)	12 (6%)		000	
15	Using conjunctions in prediction	Most of the time	Frequently	Some times	Rarely			
		66 (33%)	55 (27%)	57 (28.5%)	20 (10%)			
16	Using conjunctions in speaking	Most of the time	Frequently	Some times	Rarely			
		71 (35.5%)	61 (30.5%)	54 (27%)	14 (7%)		000	
17	Using conjunctions in writing	Very easy to use	Easy to use	Not easy use	Difficult to use			
		39 (19.5%)	112 (56.5%)	39 (19.5%)	10 (5%)		000	
18	Easiness of additive conjunctions	Very easy to use	Easy to use	Not easy use	Difficult to use			
		38 (19%)	68 (34%)	72 (36%)	20 (10%)		2 (1%)	
19	Easiness of adversative conjunctions	Very easy to use	Easy to use	Not easy use	Difficult to use			
		38 (19%)	84 (42%)	63 (31.5%)	13 (6.5%)		2 (1%)	
20	Easiness of causal conjunctions	Very easy to use	Easy to use	Not easy use	Difficult to use			
		67 (33.5%)	106 (53%)	19 (9.5%)	8 (4%)		000	
21	Easiness of temporal conjunctions	Very easy to use	Easy to use	Not easy use	Difficult to use			
		65 (32.5%)	89 (44.5%)	26 (13%)	20 (10%)		000	
22	Conjunctions in current syllabus	Enough coverage	Little coverage	No coverage				
		60 (30%)	123 (61.5%)	17 (8.5%)			000	
23	Conjunctions in classroom activity	Enough tasks	Few tasks	No tasks				
		43 (21.5%)	117 (58.5%)	39 (19.5%)			1(.5%)	200(100%)

Appendix 3. Study measurement instruments

3.1. Identification of conjunctions test

Conjunctives' Identification test

Conjunctions are words and expressions which connect two independent sentences (i.e. separated either by a semi colon or a full stop) in order to form a coherent text. **For example,** the weather is very cold. *Still,* the sun is shining. *Still* is a conjunction

Q. Now please underline the conjunctions mentioned in the text below

Safe landing

For half an hour a plane full of passengers circled over the airport. Afterwards everyone on board sensed that something was wrong. The plane was moving unsteadily through the air. The passengers had fastened their seat belts; nevertheless they were suddenly thrown forward. At this point the air hostess appeared. She looked very pale however she was quite calm.

Speaking quickly but almost in a whisper, the hostess informed everyone that the pilot had fainted. For this reason she asked if any of the passengers knew anything about machines- or at least how to drive a car. A few seconds passed silently. Then a man got up and followed the hostess into the pilot's cabin.

The man moved the pilot aside and took his seat. In addition the hostess asked him to listen carefully to the urgent instructions that were being sent by radio from the airport bellow. The plane was now dangerously close to the ground. Yet contrary to expectation and to everyone's relief, it soon began to climb.

The man wanted to become familiar with the control instruments. So he had to circle over the airport several times. Still the danger had not yet passed. The terrible moment came

when he had to land. The man was following instructions coming from the airport. At the same time he was guiding the plane towards the airfield. It shook violently as it touched the ground and moved rapidly across the field. Luckily after a long run it stopped safely.

To every body's relief the plane landed safely and all passengers shouted happily praising the man for his bravery and intelligence. Consequently a crowd of people who had been watching anxiously rushed forward to congratulate the "pilot" on a perfect landing. Moreover many airport officials arrived at the scene. In such an event they need to bring the situation under control

3.2. Function recognition of conjunctions test

Functional recognition of conjunctions' test

Conjunctions are divided into four types: ***additive*** (i.e. adding one independent sentence to another), ***adversative*** (i.e. contrasting one sentence to another), ***causal*** (i.e. showing the cause and result), and ***temporal*** (i.e. showing time sequence).

Q. Please say whether the conjunctions in the table below are additive(1), adversative (2), causal (3), temporal (4) as illustrated in the first raw.

And	**1**	***Yet***	**2**	***So***	**3**	***Then***	**4**
Therefore		*Moreover*		*Next*		*Though*	
Additionally		*Because*		*Nevertheless*		*To this end*	
Still		*In conclusion*		*Hence*		*Besides*	
Also		*Thus*		*Previously*		*However*	
Consequently		*Furthermore*		*Meanwhile*		*In spite of*	
Otherwise		*For instance*		*In short*		*Although*	
Similarly		*In this regard*		*Before that*		*Instead*	
In this respect		*At last*		*Likewise*		*Actually*	
At least		*Or else*		*That being so*		*After that*	

3.3. Reading comprehension test

Multiple-Choice Modified- Rational Cloze Test

Read the text carefully and then choose the correct option with which to complete the meaning

Canning food

Throughout history human beings have developed different methods of preserving food. Many types of fresh food are attacked by yeasts, moulds, and bacteria. (*Not only that/ Arising from this/ Regardless to this* 1) people recognized that something had to be done to prevent it from decay. The canning process seals the product in a container. *(Furthermore / Therefore / Nevertheless 2)* no infection can reach it. *(Thus / Then / However 3)* it is sterilized by heat. Heat sterilization destroys all infections present in food inside the can. No chemical preservatives are necessary. Canning extends the shelf life of food. (*Still /While / Because 4*) the contents eventually deteriorated.

The principle was discovered in 1809 by a French man called Nicolas Appert. He corked food lightly in wide-necked glass bottles. (*So / And / But 5)* after that he immersed them in a bath of hot water to drive out the air, then he hammered the corks down to seal the jars tightly. Appert's discovery was rewarded by French government. (*Though /Furthermore / Since 6)* better preserved food supplies were needed for Napoleon's troops on distant campaigns.

By 1940 an English manufacturer had replaced Appert's glass jars with metal containers and was supplying tinned vegetable soup and meat to the British navy. (*Yet/So/And 7*) many defects were observed in that product. The problem was ultimately solved in 1860 when the invention of pasteurization was practically applied. (*Consequently /In addition / By this time 8*) Louis Pasteur considerable scientific improvement by applying scientifically controlled heat to sterilize conserve food.

Today vegetables, fish, fruit, meat, and drinks are canned in enormous quantities. *(Likewise / Consequently / Instead 9)* the eating habits of millions have been revolutionized.

Foods that were previously seasonal may now be eaten at any time. *(In fact / For this purpose / Furthermore 10)* strange foods are available far from the countries where they are grown. The perishable crops many farmers now produce often depend on the proximity of a canning factory.

The preparation of food for canning is a staged process. (*Yet /So/Firstly 11*) diseased and waste portions are thrown away; meat and fish are cleaned and trimmed; fruit and vegetables washed and graded for size. The jobs are principally done by machine. (*That is / Nevertheless /At once 12*) human supervision is needed.

Secondly, vegetables are blanched. This is immersion in very hot or boiling water for a short time to remove air and soften the vegetable. It is done to make it easier to pack into cans for sterilization. Some packing machines fill up to 400 cans a minute. (Not only/ Then/ Thus 13) fruit fish and meat are packed raw and cold into cans, nut also all the air is removed. The cans are firmly sealed. (*The same way/ Because/ At this moment* 14) the pressure inside each can is limited to only about half the pressure of the outside air. This is "vacuum packing".

As the sterilization process is taking place, the cans are subjected to steam or boiling water. *(However/ Being so / Thereupon 15)* the temperature and duration vary according to the type of food. (*For example / Rather / At once 16)* cans and fruit take only 5-10 minutes in boiling water. Meat and fish are cooked at higher temperatures and for longer periods. *(Soon / whereas / Similarly 17)* other food variety needs only few minutes. After the cans are sterilized, they are cooled quickly to 32°C.. (*Thus / Otherwise / Before that* 18) the contents do not become too soft.

(For example / Finally / In that case 19) before dispatching to the wholesaler or retailer, the tins are labeled and packed into boxes. Nowadays however, labeling is often printed on in advance by the can maker. *(Despite this / After a time / In other words 20)* no paper labels are then required.

Appendix 4. Interviewing the study participants

4.1. Semi-structured interview questions

Semi-structured interview
(Verbal Justification)

This procedure used by Goldman and Murray (1992) is designed to elicit the reason(s) behind readers' choices of conjunctive options in response to answers in ***a multiple-choice rational cloze test*** and the understanding they have about the functions of these conjunctive items.

After finishing the test, students are individually asked to justify their answers.
The following questions will be asked:

1. How did you find the post-test?
2. What is the general topic of this text? Can you briefly summarize it?
3. Can you identify the items which are called conjunctions?
4. Can you tell me what linguistic categories the options mentioned in the text related to? (I.e. are they verbs, adverbs, adjectives…etc.?)
5. Is it easy for you to recognize these relations?
6. Do conjunctions have any function in the text?
7. What is the semantic relation between them?
8. How far do you use conjunctions in your reading for comprehension?
9. Is it easy for you to learn conjunctions and their functions?
10. Why do you choose (x) option gap number (y)?(this question will be repeated at least four times to check a conjunctive sample from each type)
11. What are other strategies rather than conjunctions do you use in your reading?

Categories used by Goldman and Murray (1992) for scoring verbal justification data were as follows:

Additive- appropriate justification

2. Information gives example of concept previously introduced in text (e.g. "the second sentence is an example of how it interferes").
3. Information elaborates prior information by stating additional related information that is supportive of or strengthens the information in the prior sentence (e.g. "the second sentence explains more or tell more about the first sentence").

Adversative- appropriate justification

4. Comparison or contrast with information in the prior sentence; unexpected information.
5. Restriction of scope.

Causal- appropriate justification

6. Cause-and-effect relationship between the two sentences.

7. Conclusion about the cause and effect developed over several sentences (connector introduces last element in a causal chain).
8. Consistent but vaguely stated logical relationship (e.g. "It follows from the previous sentence").

Sequential-appropriate justification

9. Introduces a new or next point.
10. Temporal relation between events described in the text.
11. Sums up prior, or previous subsequent, information.

Miscellaneous

a. Choice by exclusion: " None of the other three (alternatives) worked."
b. Guessing: "I just guessed at this one."
c. Restating or paraphrasing the text.
d. Meta-cognitive or affective statements: "It was easy to understand..." or "It made me confused."

4.2. Quantifying some of the interview data

Quantifying some interview data

1. Test difficulty □ Easy □ Medium □ Difficult

2. Text summary □ Good □ Satisfactorily □ Poor

3. Conjunction identification □ Always □ Sometimes □ Rarely

4. Grammatical categories of conjunctions

□ Correct □ Incorrect

5. Recognizing types of conjunctions

□ Always □ Sometimes □ Rarely

6. Function of conjunctions

□ Correct □Incorrect

7. Recognizing the semantic relations created by conjunctions

□ Always □ Sometimes □ Rarely

8. Using conjunctions in reading comprehension

□ Always □ Sometimes □ Rarely

9. Learning conjunctions

□ Easy □ Medium □ Difficult to learn

10. Justification of types of conjunction choice

a. additive conjunct □ Correct □ Incorrect

b. adversative conjunctions □ Correct □ Incorrect

c. causal □ Correct □ Incorrect

d. temporal □ Correct □ Incorrect

11. Using other means rather than conjunctions in reading comprehension

□ Always □ Sometimes □ Rarely

Comment

.....

.....

4.3. Spreadsheet of the quantified interview data

Semi-structured interview data

	Interview items	Easy	Average	Difficult	Miss data	Total
1	Test difficulty	11 (28.5%)	23 (60.5%)	3 (7.9%)	000	
2	Text summary	Good	Satisfactory	Poor		
		1 (2.6%)	27 (71.1%)	8 (21.1%)	1 (2.6%)	
3	Identifying conjunctions	Always	Some times	Rarely		
		34 (89.5%)	2 (5.3%)	000	1 (2.6%)	
4	Conjunction gram category	Correct	Incorrect			
		32 (84.2%)	4 (10.5%)		000	
5	Recognising conjunctive type	Always	Some times	Rarely		
		33 (86.8%)	4 (10.5%)	000	000	
6	Function of conjunctions	Correct	Incorrect			
		37 (97.4%)	000		000	
7	Recognising semantic relations	Always	Some times	Rarely		
		9 (23.7%)	23 (60.5%)	4 (10. 5%)	1 (2.6%)	
8	Using conjunctions in reading comprehension	Always	Some times	Rarely		
		8 (21.1%)	28 973.7%)	00	1 (2.6%)	
9	Learning of conjunctions	Easy to learn	Some of them easy	Difficult to learn		
		11 (28.9%)	22 (57.9%)	3 (7.9%)	1 (2.6%)	
10 a.	Justifying additive conjunctions	Correct	Incorrect			
		25 (65.8%)	9 (23.7%)		3 (7.9%)	
b.	Justifying adversative conjunctions	Correct	Incorrect			
		15 (39.5%)	20 (52.6%)		2 (5.3%)	
c.	Justifying causal conjunctions	Correct	Incorrect			
		24 (63.2%)	12 (31.6%)		1 (2.6%)	
d.	Justifying temporal conjunctions	Correct	Incorrect			
		35 (92.1%)	2 (5.3%)		000	
11	Using other means rather than conjunctions	Always	Some times	Rarely		
		1 (2.6%)	26 (68.4%)	7 (18.4%)	3 (7.9%)	37(100%)

Appendix 5. Reading intervention programme

5.1. A sample of the reading comprehension programme

ENGLISH DEPARTMENT
READING COMPREHENSION (4th year)

Lesson (1)

Dreams—what do they mean?

Dreams have always held a universal fascination. Some primitive societies believe that the soul leaves the body and visits the scene of the dream. Generally, however, dreams are accepted to be delusions, much in common with day dreams-the fantasies of our waking life. When dreaming, however, one tends to believe fully in the reality of the dream world, however inconsistent, illogical and odd it may be.

Although most dreams apparently happen spontaneously, dream activity may be provoked by external influences.' Suffocation' dreams are connected with the breathing difficulties of heavy cold, for instance. Internal disorders such as indigestion can cause vivid dreams, and dreams of racing fire-engines may be caused by the ringing of an alarm bell.

Experiments have been carried out to investigate the connection between deliberately inflicted pain and dreaming. For example, a sleeper bricked with a pin perhaps dreams of fighting a battle and receiving a severe sword wound. Although the dream is stimulated by the physical discomfort, the actual events of the dream depend on the associations of the discomfort in the mind of the sleeper.

A dreamer's eyes often move rapidly from side to side. Since people born blind do not dream visually and do not manifest this eye activity, it is thought that the dreamer may be scanning the scene depicted in his dream. A certain amount of dreaming seems to be a human requirement- if a sleeper is roused every time his eyes begin to move fast, effectively depriving him of his dreams; he will make more eye movements the following night.

People differ greatly in their claims to dreaming. Some say they dream every night, others only very occasionally. Individual differences probably exist, but some people immediately forget dreams and others have good recall.

Superstition and magical practices thrive on the supposed power of dreams to foretell the future. Instances of dreams which have later turned out to be prophetic have often been recorded, some by men of the highest intellectual integrity. Although it is better to keep an open mind on the subject, it is true that the alleged power of dreams to predict future events still remains unproved.

(Adapted from Mathews & Mackay 1994)

Interactive practices

1. Read the title carefully. What do you think the text is about?
2. What is your background knowledge about dreams?
3. Scan the text quickly and look for any clues which support your knowledge of the topic?
4. Underline the connecting words and expressions in the text?
5. Enclose the segments they join between brackets?
6. Try to understand the relationships (i.e. *addition, cause and result, contrast or time sequence*) that exist between the joined clauses / sentences?
7. Read the whole text silently?
8. Say whether the following statements are true or false according to the information given in the passage

    a. Dreams while we are asleep are quite different from day- dreams
    b. Dreams may be caused by an upset stomach
    c. If you brick someone with a pin, he may dream he has been stabbed.
    d. Sighted people are those who have never been able to see dream in exactly the same way.
    e. Dreaming is probably unnecessary.
    f. There is plenty of proof available that dreams foretell the future.

9. Complete the following sentences:

    i. Many people believe that dreams can predict future events, however, ...

ii. Most dreams happen because.....

iii. Old people rarely dream. For example, ...
.....

iv. If you are under stress, you will .....

v. Soon after we fall asleep.....

10. Write down a short summary of the text above?

5.2. An example of classroom activity of the explicit teaching of conjunctions

STUDENT ACTIVITY

1. Look at this sentence

Although he didn't have much money, he brought her a lovely present.
Does it mean the same as (a) or (b) below?

a) He bought her a lovely presents because he didn't have much money.
b) He didn't have much money, but he bought her a lovely present.

Although
Even though → are all adverbs which link or connect two contrasting ideas.
Though

Look again at the example. The fact that he bought her a lovely present is rather surprising or unexpected, because we know that he didn't have much money.
There is very little difference in meaning between 'although', 'even though', and 'though'. 'Although is a little more formal, and common in writing. With 'even though', 'even' adds emphasis and surprise.

Notice that you are using these connectives to join two clauses.

although even though .though	x,	y.	(or)	y,	although even though though	x,

2. Which of the sentences below use 'although', 'even though', and 'though' correctly?

a) We enjoyed our holiday, even though the weather was terrible.
b) We hated the boat trip though the see wasn't calm.
c) Spain was lovely even though the weather was really nice.
d) Although I didn't like ice-cream, I can eat it if I have to.

Now that you understand these connectives, complete these sentences in your own words.
a) Even though I didn't enjoy the film ..... .
b) I didn't like John, though ..... .
c) Although Shakespeare's plays are difficult to read,..... .
d) He looked very ill though ..... .

3. Now use your knowledge of the connectives to guess the meaning of other words you don't know; remember that 'although', even 'though', and 'though' link contrasting ideas.
The words underlined below are all *colloquial.* What do you think they mean?

a) He failed his exam even though he *swotted* hard for it before.
b) He *flunked* the test even though he was the cleverest in the class.
c) Richard managed to understand the maths lesson, though he is a bit *dim*
d) Although his teacher told him to *pull his socks up*, he continued to be a lazy student.

(Adopted from Gairns and Redman 1996)

5.3. Function of conjunctions is indicated in the text below by its regular co-occurrence with appropriate symbol

It was only about two centuries ago-less than one thousandth of man's existence-that the population growth pattern changed. New discoveries in medical science had a dramatic effect on the death rate. Fewer children died in infancy, and adults lived longer. At the same time, the birth-rate stayed much the same-people were still having large families-even though they could expect most of their children to survive. Consequently, the population began to expand rapidly. Moreover, in the 20th century, this acceleration in population growth has begun to cause severe social and economic problems in many development countries.

5.4. An expository text used for cloze procedure technique

Biologists have traditionally been concerned with identifying the common characteristics of living things. Living things always display four characteristics that are essentially unique to them. (1) these characteristics are the maintenance of some structure, the performance of metabolic functions, response to stimuli, and reproduction. The structural diversity of organism is enormous. (2) most living things are composed of the same basic structural units called cells. Some organisms are unicellular, their entire anatomy being limited to the confines of a single cell. Many organisms are multicellular; they are composed of many cells, some of which are highly specialized to perform specific functions. In higher, multicellular organisms certain types of cells combine in predictable patterns to form tissues and organs. (3) what organ or tissue a certain cell will lead to may be better understood by knowing these patterns. The maintenance of structure requires that an organism obtain substance and energy from its environment. To do this the organism must acquire nutrients from the environment. (4) it must break the nutrients down through respiration or fermentation. Nutrients are used by the organism to perform its functions, the most important being to keep the organism alive and healthy.

Response alternatives [correct response is underlined]

Slot 1:	Slot 2:	Slot 3:	Slot 4:
Therefore	Nevertheless	In particular	Briefly
Moreover	As a result	Then	But
Instead	Finally	Thus	In addition
Briefly	For example	However	Thus

Adopted from Goldman and Murray (1992, p.512)

5.5. Halliday and Hasan's (1976) taxonomy of conjunctive relations

conjunction type	External / internal	Internal (unless otherwise specified)		
Additive	Additive, simple: Additive *and, and also* Negative *nor, and...not* Alternative *or, or else*	Complex, emphatic: Additive *furthermore In addition Besides* Alternative *alternatively* Complex, de-emphatic: After-thought *Incidentally By the way*	Apposition: Expository: *that is, I mean, In other words,* Exemplificatory: *for instance, thus*	Comparison: Similar *likewise, Similarly, In the same way,* Dissimilar: *on the other hand ,by contrast*
Adversative	Adversative 'proper': Simple *yet, thought, only* Containing 'and' *But* Emphatic: *however, Nevertheless, Despite this*	Contrastive: A vowel *in fact, Actually, As a matter of fact* Contrastive (external): Simple: *but, and* Emphatic: *however, On the other hand, at the same time*	Correction: Of meaning *instead, Rather, on the contrary,* Of wording *at least, Rather, I mean*	Dismissal: Closed *In any case In either case Whichever* Open- ended I*n any case, Anyhow, At any rate, However it is*
Causal	Causal, general: Simple *so, then, hence, therefore* Emphatic: *consequently, because of this* Causal specific: Reason: *for this reason, on account of this.* Result: *as a result, in Consequence.* Purpose: *for this purpose, with this in mind.*	Reversed causal: Simple: *for, because* Causal, specific: Reason: *it follows, on this basis.* Result: *arising out of this,* Purpose: *to this end.*	Conditional (also ext) Simple *then* Emphatic: *in this case, in such an event, that being so.* Generalized: *under the circumstances.* Reversed polarity *Otherwise, under other circumstances.*	Respective: Direct: I*n this respect, in this regard, with reference to this.* Reversed polarity: *otherwise, in other respect, aside from this*
Temporal	Temporal, simple (external only): Sequential *then, next, after that.* Simultaneous: *the same time.* Preceding: *previously, before that* Conclusive: Simple*:* *finally at last.* Correlative forms: Sequential: *first...then* Conclusive: *at first*	Complex (external only) Immediate: *at once, thereupon.* Interrupted: *soon, after a time.* Repetitive: *next time, on another occasion.* Specific: *next day, hour later.* Durative: *meanwhile* Terminal: *until then.* Punctiliar: *at this moment.*	Internal temporal: Sequential: *then, next, secondly.* Conclusive: *finally, in conclusion.* Correlative forms: Sequential: *first...next* Conclusive: *.....finally*	Here and now: Past: *up to now, hitherto.* Present: *at this point, here.* Future: f*rom now on, Henceforward.* Summary: Summarizing: i*n short, briefly,* Resumptive: to *resume, to return to the point.*

5.6. Martin's (1992) classification of logico-semantic relations in English Text

	Distinctive Internal	External/internal "Cohesive"	Paratactic	Hypotactic
Additive				
Addition	Moreover, In addition	And	and	besides
Alternation:	Alternatively	Or	Or	If not…then
Comparative				
Similarity:	Equally, That is	Likewise	so' Finite	Like, as, As if, like when
Contrast:	On the other hand	In contrast, instead	but	Whereas, except that
Temporal				
Simultaneous:	At the same time	Meanwhile, Throughout	and, meanwhile	while, when, as long as
Successive:	Finally, At first	Previously, Thereupon	then	after, since, now that
Consequential				
Purpose:	To this end	To this end	modulation + so	so that, lest, so as, in case
Condition:	Then	Then, otherwise	modality + so	if, even if, unless
Consequence:	In conclusion, After all	Therefore, for	so	because, as, since
Concession:	Nevertheless, Admittedly	However, Yet	but	although, in spite of
Manner:	In this way	Thus	and thus	by, thereby